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MONTHLY
LABOR REVIEW

Vol. 27, No. 3 September, 1928

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Mule spinners' cancer, p. 27
Union scales of wages, 1913 to 1928, p. 114
Wages in radio-manufacturing industry, p. 138
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This Issue in Brief

The productivity of labor in the woolen and worsted industry of the United States and certain European countries was the subject of a special inquiry made by the Bureau of Labor Statistics in 1927. Because of the difficulty of securing exactly comparable data in different countries and different establishments, the study was necessarily limited in scope. For a few types of material, however, very interesting data were secured regarding both time and labor costs of production. Page 1.

Mule-spinners' cancer has only recently been recognized as a separate disease entity and the causative factors are still not fully determined. The disease has been most prevalent in England among spinners in the Lancashire cotton mills and it was thought that manufacturing conditions peculiar to that locality might be the cause of the disease. The discovery of a few cases in the records of the vital statistics for the United States suggests, however, that the disease may be a hazard of the occupation here which has heretofore escaped attention. Page 27.

A survey of wages and hours of labor in the radio manufacturing industry has just been completed by the Bureau of Labor Statistics. It shows that in the manufacture of receiving sets average actual earnings in one week ranged from $13.94 for female packers and wrappers to $44.06 for male tool and die makers, the average for all employees being $23.25. In the making of loud speakers the average actual earnings in one week ranged from $12.93 for female repairers to $41.88 for male tool and die makers, the average for all employees being $22.87. In the manufacture of tubes, the average actual earnings in one week ranged from $14.37 for female filament testers to $28.10 for male electric testers, the average for all employees being $20.36. Page 138.

Data regarding union wages and hours of labor for 1928 are given for certain important trades in 40 localities. Page 114. These are preliminary figures from the regular annual survey by the Bureau of Labor Statistics.

Although the hazards connected with the use of poisonous substances are well understood, it is frequently found that such substances are being employed in a manner hazardous to health. This fact has recently been demonstrated in a study of industrial laboratories, where it was found that benzol was being used in the chemical tests under conditions which constituted a distinct hazard to the workers in these laboratories. Page 67.

The industrial pension plan case of Morris & Co. has been decided by the Supreme Court of Illinois. The court held that on the winding up of the affairs of the company the contributors to the fund had prior rights over retired pensioners. Page 76.

The new workmen's compensation act of Porto Rico replaces the former compulsory exclusive State fund insurance system by the direct liability of the employer, with provision for securing the payment of awards through insurance in private or mutual insurance companies, through the State fund, or through the deposit of bonds or other security in the case of self-insurers. Page 98.

Unemployment insurance in the clothing industry has been extended to New York City, by agreement between the Amalgamated Clothing Workers and the manufacturers, and in line with similar agreements in Chicago and Rochester. The New York unemployment insurance fund, however, is to be maintained solely by contributions from the employers, amounting to 1½ per cent of their total labor cost. Contributions are to begin September 1, 1928, but no benefits are to be paid during the first year, the money collected during that period to be used to establish a reserve fund from which benefits are to be paid after September 1, 1929. Page 96.

The New York State Department of Labor is completely vindicated in the report of Prof. Lindsay Rogers, acting as a special commissioner to investigate charges of fraud in the administration of the workmen's compensation act. Page 94.

There is a permanent surplus of at least 200,000 workers in the coal-mining industry in England, according to the report of the Industrial Transference Board, and probably 100,000 more in the heavy industries, such as iron and steel and shipbuilding. Methods of absorbing these workers in other industries and districts, and of helping them to migrate are discussed, these being, in the opinion of the board, the main lines along which relief is to be sought. Page 56.

A striking feature of the report of the Industrial Conference between representatives of workers and employers in England, generally known as the Mond Conference, is its strong declaration in favor of the trade-union organizations as the medium of negotiation in deciding industrial conditions. A board of appeal, to which a worker who feels that he has been victimized may refer his case, is another point stressed, and the third is the establishment of boards for voluntary conciliation proceedings. Page 53.

A serious housing shortage in France led to the recent enactment of a law providing for the extension on a large scale of credit facilities for the construction of cheap dwellings. The law makes provision for the construction during a five-year period of 200,000 dwellings to be offered for sale at low prices, and of 60,000 dwellings for lease at average rentals. Page 102.

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Time and Labor Cost of Production in the Woolen and Worsted Industry: United States, England, France, Germany

By CHARLES E. BALDWIN, ASSISTANT COMMISSIONER OF LABOR STATISTICS

DURING the summer of 1927 the Bureau of Labor Statistics undertook a study of productivity of labor in the woolen and worsted manufacturing industry. The purpose was to make a comparison of the man-hour production in the woolen and worsted manufacturing establishments of the United States with the man-hour production in similar establishments in foreign countries.

At the outset it was known that the study could not be a measure of the efficiency of labor alone, as the output per man-hour is necessarily influenced very largely by the equipment, layout, and management of the establishment. The output per man-hour of the small, primitive establishment with its antiquated machinery and old-fashioned methods and management could not be fairly compared, on the basis of human labor alone, with that of a large modern establishment, with its up-to-date machinery and equipment so arranged as to obtain the greatest economy of time, and its scientific management with the purpose of securing the largest possible output with the smallest number of employees.

The figures herein presented therefore represent comparisons of the output per employee in the various establishments, with the machinery and equipment with which he had to work and under the management of the particular plant in which he was employed.

The first step in the study was to obtain information that would represent the productivity of establishments in the United States. To accomplish this a large number of different kinds of woolen and worsted cloths were procured as samples from which to obtain productivity costs. These were selected with the view of bringing together a sufficient number of different kinds and grades of woolen and worsted cloths to be fairly representative of the cloths manufactured in the United States. Each kind of cloth was accurately described, the description showing its weight per yard (in ounces), width (in inches), number of warp ends per inch, number of picks per inch, and the sizes and qualities of woolen and worsted yarns used, so that the sample could be definitely identified.

A large number of woolen and worsted cloth manufacturers in the United States—the ones who manufactured the various cloths selected as samples—were induced to furnish facts as to the time and wage costs of producing each of such cloths; that is, the man-hours consumed and the cost on the basis of wages paid per yard of cloth, covering all the operations from sorting the wool to packing the finished cloth ready for shipment. These costs were verified as far as possible, so that the figures presented could be accepted as accurate statements of the time and labor costs of producing each kind of cloth.

The procedure in securing foreign time and labor costs was similar to that followed in this country. The representative of the Bureau of Labor Statistics who had charge of the work took the samples of cloths to the woolen and worsted manufacturing centers in certain foreign countries and attempted, first, to find establishments in which the same kinds of cloths were made, and, second, to obtain from the officials of those establishments the man-hour cost per yard of producing the identical kinds of cloth in those foreign countries.

Considerable difficulty was experienced in each country in finding establishments that manufactured the identical kinds and qualities of cloths, as no industrial directories could be found that contained descriptions of the products of establishments sufficiently definite to identify them. It was necessary, therefore, to visit the various establishments and to compare the samples with the cloths being manufactured therein until like cloths could be found. This was found to be quite difficult, because while similar qualities of cloths could readily be found it was hard and in some cases impossible to find samples of exactly the same descriptions as the American samples. The samples selected, therefore, were the same, or nearly enough like the American made cloths to be fairly comparable.

No attempt was made to make the study exhaustive, as it was known that many establishments do not keep records of man-hour production. Accordingly, it was decided to be satisfied with data from a few representative establishments in each country from which data could be secured. It is not claimed, therefore, that the results show the best or worst, nor perhaps the average, conditions but simply a picture of what was accomplished in the plants visited that could furnish the information desired.

It was found that in the United States the manufacturers quite generally have worked out the money cost of production per yard of each kind of cloth produced, but only in a small proportion of cases do the books show the man-hours expended in its production. The books were found to show, however, the quantity of product produced in each department per day or per week, so that by combining the time worked by the employees in each department the aggregate time consumed by all the workers on a definite quantity of product could be ascertained and the time cost per yard computed. In cases where certain employees worked more or less interchangeably on two or more kinds of product, an estimated division of their working time was necessarily made.

In European countries, particularly in England and Germany, the establishments quite generally compute the total production

costs of their various kinds of product, but none were found that had prepared figures to show the time and labor costs of any unit of production. These data, therefore, had to be specially prepared.

A large proportion of the woolen and worsted manufacturing plants in the United States perform all the processes of manufacture from the wool in the grease to the completed cloth packed ready for shipment; that is, they sort, scour, card, and comb the wool, spin the yarn, weave, dye, and finish the cloth, and pack it for shipment. There are some establishments, however, which carry the processes only through the spinning of the yarn, which they sell to establishments which weave the cloth and do the dyeing and finishing. There are some plants, too, that simply weave the cloth in the gray and have it dyed and finished in plants that specialize in those processes only. It was possible, therefore, to find in the United States single establishments that could furnish complete information of time and labor costs of each sample.

In the European countries it was found that the work in the industry was much more specialized. Only a small proportion of the establishments in any of the foreign countries visited perform all the processes of manufacture from the wool to the finished cloth. Some establishments carry the processes only through the spinning of the yarn, which they sell to weaving mills, while many of them stop with the making of the tops, which are furnished to the worsted mills and the noils sent to the mills which manufacture woolen cloth. By the making of tops is meant the sorting and scouring of the wool, and combing it into tops preparatory to spinning into worsted yarn. Some, too, simply sort and scour the wool, the combing being done in another establishment. Some plants are spinning mills only. They may purchase the tops and simply card, spin, and wind the yarn to be sold to another plant that does the weaving. There are other plants, too, that dye and finish the cloth exclusively.

Thus, in foreign countries it was found to be much more difficult to get complete schedules, as it was often necessary to go to two or more establishments to get all the data necessary to complete the information for a given sample. This was particularly true in England, where the processes are very highly specialized. While a good many establishments do perform all the processes, a very large proportion of them do only certain parts. There are many which are exclusively top makers. They buy their own wool, sort it into qualities and grades, card it, and comb the tops, which they sell to worsted manufacturers, or they may actually have the combing done by still another firm on a commission basis; that is, the customer furnishes the wool to the comber and receives back the tops, noils, and waste. The comber may sort the wool, also, or the wool may come in sorted condition, in which case he does the combing only. The commission comber, however, ordinarily has no expense for sorting as the wool is furnished to him already sorted and he simply puts it through the combing process. There are firms, too, that do weaving on a commission basis. They own the looms, and the yarns are brought to them ready for weaving, they hire the help and weave the cloth at a specified price per yard. The dyeing and finishing may also be done by still another firm. In England a very large percentage, probably 60 per cent or more, of all the cloth produced is dyed and finished in

establishments which perform none of the foregoing processes. A large part of the material dyed in the wool or in the yarn is dyed on this basis. The same is true to a very large extent in Germany, France, and Belgium, which countries were visited. For these reasons it was with added difficulties that information could be secured and combined for each sample. In fact, it was impossible in some cases to obtain and match up complete data for all the processes of manufacture of the samples in each country. Therefore, in those cases the best that could be done was to make a comparison of time and labor costs of certain processes or departments of manufacture instead of the unit as a whole.

It must be borne in mind that, as already stated, the labor cost of production is affected to a large extent by the machinery and equipment of the establishment. This is clearly made manifest in the weaving department of a woolen or worsted mill, where the quantity of production per employee per hour is measured largely, not only by the kind of looms the weaver operates but by the speed at which the looms are run, the efficiency of a loom being measured by the number of picks per minute at which it is operated.

Some mills were found in foreign countries to have modern looms of high speed running alongside the old type of slow ones, the slow ones running as low as 48 picks per minute and the rapid ones as high as 155 picks per minute, the maximum output of the former, therefore, being less than one-third as much as that of the latter. Then again, in some worsted mills modern automatic looms have been installed which make it possible for one employee to operate 4 or 6, and on some kinds of cloth as high as 12 looms, while it is not customary for an employee to operate more than 2 of the old type of looms and in some instances only 1.

The automatic loom has been installed and is being operated quite generally in American worsted mills, but has been adopted to only a small extent in European countries. Such looms were found in a few mills in England and Germany, and an occasional one in France, but the number of such looms was very small. The English and German officials stated in several instances that the introduction of automatic looms was combated by the employees on the ground that their adoption would reduce the number of jobs in the mills and in consequence a certain number of them would lose their positions. Instances were cited where employees refused to work on these looms, thus preventing their use, this position being supported by the labor organizations to which they belonged. The sentiment of the public was also against it, owing to the large amount of unemployment existing, which they considered would be increased if labor-saving machinery and devices were installed. In this connection it may be stated that in all of the European countries visited there were large numbers of persons unemployed, and public sentiment generally, as well as that of the workers, was strongly antagonistic to the introduction of labor-saving machinery and methods that would reduce the number of jobs; therefore, there was little inducement for the employer to attempt to develop mass production through the introduction of labor-saving machinery and devices.

Great variations in time cost were also found, owing not only to the differences in plant equipment but to the kinds and quantities of product being produced; that is, establishments running on a mass-production basis and producing large quantities of a single kind of cloth showed a much lower time cost per yard of cloth than did those establishments that were making a wide variety of cloths and only small quantities of each. Some establishments in the United States were found running for long periods of time, many weeks or months, with the whole force working on a single pattern of cloth, while in others numerous kinds were being made at the same time. In some cases, particularly in foreign countries, the establishment was run on orders only, making only a limited number of yards for which an order had been taken, and perhaps only a single piece. In such cases the time cost per yard was found to be much greater.

In the dyeing department, for instance, the dyeing machines or vats are usually constructed so that several strings of cloth can be dyed at the same time. In one plant where but a small quantity of cloth of a given color is to be dyed, perhaps but one string of cloth will be found in the dyeing machine, while in the mass-production plants three or four or more strings of cloth will be dyed in one machine at the same time. The man power necessary to operate the machines is approximately the same in either case. Thus the time cost of dyeing per yard may be three or four or more times as much in one case as in the other. These wide differences in quantity production will also be found in other processes in the finishing department.

The point should be noted, therefore, that the time cost of production is influenced not only by the character of labor employed but more by the equipment and management of the establishment and the volume of the product.

As already stated, it was found difficult and well nigh impossible to bring together for the various establishments the total time costs of all the processes of manufacture from the wool in the grease to the finished cloth packed for shipment, and in view of the fact that no attempt was made to arrive at overhead expense, cost of management, material, etc., the statistical statements for the samples which follow present comparisons of time costs of the important manufacturing processes only.

The money costs for foreign samples have been changed into United States currency on the basis of the exchange as of August, 1927.

The weaver's rate per yard reported in each statement is the amount received by the weaver for each yard of cloth woven on the loom tended. The weaver may attend two or more looms and perhaps a different kind of cloth may be woven on each loom. In that case his weekly earnings would be the aggregates of the yards woven per week on each loom multiplied by the weaver's wage rate per yard.

The speed of the looms means the number of picks per minute, i. e., the number of times the shuttle is thrown back and forth through the loom per minute. The earnings of a weaver are influenced, therefore, not only by the number of looms he runs and the wage rate received per yard, but also by the speed at which the loom is run.

Comparison of Time and Labor Costs of Various Samples

A COMPARISON of the time and labor costs of the various samples secured in the United States and foreign countries follows:

SAMPLE NO. 1

Men's worsted serge, 56 inches wide; weight, 11 ounces per yard. The loom analysis shows 4,256 warp ends of two-ply No. 45 worsted yarn; width in reed, 70.75 inches. The weft is single thread, No. 24 worsted yarn, 70 picks to the inch. It was dyed in the piece.

American mill.—The man-hours expended in production of tops was 0.105 at a labor cost of $0.0490 per pound. The time consumed in making the yarn per yard of finished cloth was 0.3612 hour, and the labor cost $0.1917. The dressing and weaving required 0.2978 man-hour and a labor cost of $0.1634; finishing and dyeing, 0.1861 hour and a labor cost of $0.0845; packing and shipping, 0.0096 hour and a labor cost of $0.0048. Total time cost per yard, 0.8547 hour; labor cost, $0.4444.

The weaver's rate per yard was $0.0457; number of looms tended per person, 6; speed of looms, 120 picks per minute; yards produced per loom, per week of 48 hours, 110.

English mill.—The cost of a similar fabric of 11½-ounce weight per yard in English mills was found to be as follows:

Time expended per pound of tops, 0.0935 man-hour, labor cost $0.0262; yarn per yard of finished cloth, time 0.4943 hour, labor cost $0.0935; dressing and weaving, time 0.4830 hour, labor cost $0.1187; finishing and dyeing, time 0.4355 hour, labor cost $0.1462; packing and shipping, time 0.0345 hour, labor cost $0.0163. Total time expended per yard, 1.4473 hours; labor cost, $0.3746.

The weavers' rate per yard was $0.0466; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom, per week of 48 hours, 117.

German mills.—Information for this sample was secured from German mills for the processes of dressing and weaving, and finishing and dyeing only. Figures for dressing and weaving per yard were: Time expended 0.6150 man-hour per yard, labor cost $0.2031; finishing and dyeing, time 0.7400 hour, labor cost $0.2044. The weaver's rate per yard was $0.0411; number of looms tended per person, 1; speed of looms, 90 picks per minute; yards produced per loom, per week of 48 hours, 77.

French mills.—The only data secured for this sample from French mills were for dressing and weaving, and finishing and dyeing. For this the figures show: Dressing and weaving, time 0.5500 man-hour, labor cost, $0.0850; finishing and dyeing, time 1.0330 hours, labor cost $0.1600.

The weaver's rate was $0.058 per yard; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom, per week of 48 hours, 157.

SAMPLE NO. 2

Men's worsted serge, 60 inches wide; 15⅔ ounces per yard. The loom analysis shows 4,380 warp ends of 2-ply No. 28 worsted yarn; width in reed, 73.1 inches. The weft is single thread, No. 19 worsted yarn, 62 picks to the inch. It was dyed in the piece.

American mill.—The time expended in production of tops was 0.105 man-hour at a labor cost of $0.063 per pound. The time consumed in making the yarn per yard of finished cloth was 0.3866 hour and the labor cost $0.2419. The dressing and weaving required 0.3025 hour and a labor cost of $0.1633; finishing and dyeing, 0.1859 hour and a labor cost of $0.0844; packing and shipping, 0.0098 hour and a labor cost of $0.0049. Total time cost per yard, 0.8848 hour; labor cost, $0.4945.

The weaver's rate per yard was $0.0431; number of looms tended per person, 6; speed of looms, 120 picks per minute; yards produced per loom, per week of 48 hours, 115.

English mill.—Time expended per pound of tops 0.0885 man-hour, labor cost $0.0246; yarn per yard of finished cloth, time 0.4737 hour, labor cost $0.0896; dressing and weaving, time 0.4790 hour, labor cost $0.1147; packing and shipping, time 0.0345 hour, labor cost $0.0163. Total time expended per yard, 1.4307 hours; labor cost, $0.4255.

The weaver's rate per yard was $0.0412; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom, per week of 48 hours, 127.8.

German mill.—Information for this sample was obtained from German mills for the processes of dressing and weaving and finishing and dyeing only. Figures for dressing and weaving per yard were: Time expended, 0.7400 man-hour per yard, labor cost $0.2213; finishing and dyeing, time 0.6700 hour, labor cost $0.2030. The weaver's rate per yard was $0.0405; number of looms tended per person, 1; speed of looms, 90 picks per minute; yards produced per loom, per week of 48 hours, 97.8.

French mills.—The only data obtained for this sample from French mills were for dressing and weaving and finishing and dyeing. For this the figures show: Dressing and weaving, time 0.6330 man-hour, labor cost $0.0960; finishing and dyeing, time 1.4330 hours, labor cost $0.2230.

The weaver's rate was $0.0495 per yard; number of looms tended, 2; speed of looms, 120 picks per minute; yards produced per loom, per week of 48 hours, 173.

SAMPLE NO. 3

Unfinished worsted suiting, 56 inches wide; weight, 13½ ounces per yard. The loom analysis shows 4,312 warp ends of 2-ply No. 40 worsted yarn; width in reed, 70.80 inches. The weft is double-thread No. 40 worsted yarn, 71 picks to the inch. It was dyed in the piece.

American mill.—The time expended in production of tops was 0.105 man-hour at a labor cost of $0.0630 per pound. The time consumed in making the yarn per yard of finished cloth was 0.5249

hour and the labor cost $0.3070. The dressing and weaving required 0.5012 man-hour and a labor cost of $0.2705; finishing and dyeing, 0.1797 hour and a labor cost of $0.0816; packing and shipping, 0.0098 hour and a labor cost of $0.0049. Total time cost per yard, 1.2156 hours; labor cost, $0.6640.

The weaver's rate per yard was $0.1236; number of looms tended per person, 2; speed of looms, 125 picks per minute; yards produced per loom, per week of 48 hours, 106.

English mills.—Time expended per pound of tops 0.0970 man-hour, labor cost $0.0277; yarn per yard of finished cloth, time 0.7486 hour, labor cost $0.1431; dressing and weaving, time 0.4070 hour, labor cost $0.1105; finishing and dyeing, time 0.1260 hour, labor cost $0.0660; packing and shipping, time 0.0490 hour, labor cost $0.0102. Total time expended per yard, 1.3306 hours; labor cost, $0.3298.

The weaver's rate per yard was $0.0406; number of looms per person, 2; speed of looms, 120 picks per minute; yards produced per loom, per week of 48 hours, 127.

German mills.—Information for this sample was obtained from German mills for the processes of dressing and weaving and finishing and dyeing only. Figures for dressing and weaving per yard were: Time expended 0.5800 man-hour per yard, labor cost $0.2122; finishing and dyeing, time 0.8600 hour, labor cost $0.2678. The weaver's rate per yard was $0.0566; number of looms tended per person, 2; speed of looms, 105 picks per minute; yards produced per loom, per week of 48 hours, 84.1.

SAMPLE NO. 4

Worsted and cotton gabardine, 56 inches wide; weight, 14 ounces per yard. The loom analysis shows 6,832 warp ends of 2-ply No. 40 worsted yarn; width in reed, 61.1 inches. The weft is 2-ply No. 40 combed cotton, 50 picks to the inch.

American mill.—Information for this sample was obtained only for tops, warp, dressing and weaving, finishing and dyeing, and packing and shipping. Cotton yarn for weft was purchased.

The time expended in production of tops was 0.1050 man-hour at a labor cost of $0.0630 per pound. The time consumed in making the warp per yard of finished cloth was 0.3500 hour, and the labor cost $0.1776. The dressing and weaving required 0.4790 hour, and a labor cost of $0.2581; finishing and dyeing, 0.2115 hour, and a labor cost of $0.0960; packing and shipping, 0.0102 hour, and a labor cost of $0.0051.

The weaver's rate per yard was $0.0922; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 145.

English mill.—Time expended per pound of tops 0.0970 hour, labor cost $0.0277; warp yarn per yard of finished cloth, time 0.5335 hour, labor cost $0.0950; dressing and weaving, time 0.4940 hour, labor cost $0.1411; finishing and dyeing, time 0.1380 hour, labor cost $0.0406; packing and shipping, time 0.0410 hour, labor cost $0.0085.

The weaver's rate per yard was $0.0390; number of looms tended per person, 2; speed of looms, 130 picks per minute; yards produced per loom per 48-hour week, 134.

French mill.—The only data obtained for this sample were for dressing and weaving and finishing and dyeing. For this the figures show: Dressing and weaving, time 0.6670 hour, labor cost $0.1050; finishing and dyeing, time 1.8330 hours, labor cost $0.2850.

The weaver's rate per yard was $0.0440; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per 48-hour week, 192.

SAMPLE NO. 5

Worsted and cotton covert cloth, 56 inches wide; weight, 8.83 ounces per yard. The loom analysis shows 4,816 warp ends of a combination of one thread of No. 36 worsted and one thread of No. 120 combed cotton yarn; width in reed, 61.25 inches. The weft is single thread, No. 28 worsted yarn, 67 picks to the inch. It was dyed in the piece.

American mill.—The time expended in production of tops was 0.1050 man-hour at a labor cost of $0.0630 per pound. The time consumed in making the yarn per yard of finished cloth was 0.2948 hour and the labor cost $0.1456. The dressing and weaving required 0.4610 man-hour and a labor cost of $0.2499; finishing and dyeing, 0.2220 hour and a labor cost of $0.1008; packing and shipping, 0.0098 hour and a labor cost of $0.0049. Total time cost per yard, 0.9876 hour; labor cost, $0.5012.

The weaver's rate per yard was $0.1144; number of looms tended per person, 2; speed of loom, 125 picks per minute; yards produced per loom per week of 48 hours, 109.

English mill.—Time expended per pound of tops, 0.0600 man-hour, labor cost, $0.0193; yarn per yard of finished cloth, time 0.3999 hour, labor cost, $0.0671; dressing and weaving, time 0.4120 hour, labor cost $0.1142; finishing and dyeing, time, 0.1210 hour, labor cost, $0.0339; packing and shipping; time 0.0390 hour, labor cost $0.0081. Total time expended per yard, 0.9719 hour; labor cost, $0.2233.

The weaver's rate per yard was $0.0445; number of looms tended per person, 2; speed of looms, 130 picks per minute; yards produced per loom per week of 48 hours, 116.5.

SAMPLE NO. 6

Vigoureux worsted serge, 56 inches wide; weight, 12 ounces per yard. The loom analysis shows 3,416 warp ends of 2-ply No. 28 worsted yarn; width in reed, 64 inches. The weft is single thread No. 20, worsted yarn, 59 picks to the inch.

American mill.—The time expended in production of tops was 0.1050 man-hour at a labor cost of $0.0480 per pound. The time consumed in making the yarn per yard of finished cloth was 0.3151 hour and the labor cost $0.1841. The dressing and weaving required 0.4193 man-hour and a labor cost of $0.2265; finishing and dyeing, 0.1480 hour and a labor cost of $0.0672; packing and shipping, 0.0096 hour and a labor cost of $0.0048. Total time cost per yard, 0.8920 hour; labor cost, $0.4826.

The weaver's rate per yard was $0.1078; number of looms tended per person, 2; speed of looms, 125 picks per minute; yards produced per loom per week of 48 hours, 126.5.

English mill.—Time expended per pound of tops, 0.0750 man-hour, labor cost $0.0243; yarn per yard of finished cloth, time 0.5047 hour, labor cost $0.0892; dressing and weaving, time 0.5380 hour, labor cost, $0.1513; finishing and dyeing, time 0.1950 hour, labor cost $0.0660; packing and shipping, time 0.0550 hour, labor cost $0.0114. Total time expended per yard, 1.2927 hours; labor cost, $0.3179.

The weaver's rate per yard was $0. 0654; number of looms tended per person, 2; speed of looms, 108 picks per minute; yards produced per loom per week of 48 hours, 100.5.

SAMPLE NO. 7

Silk stripe worsted serge, 56 inches wide; weight, 13.03 ounces per yard. The loom analysis shows 4,368 warp ends of 2-ply No. 36 worsted yarn; width in reed, 68 inches. The weft is single thread No. 19 worsted yarn, 66 picks to the inch.

American mill.—The time expended in production of tops was 0.1050 man-hour at a labor cost of $0.0530 per pound. The time consumed in making the yarn per yard of finished cloth was 0.3800 hour, and the labor cost, $0.2129. The dressing and weaving required 0.3150 man-hour of time and a labor cost of $0.1675; finishing and dyeing, 0.2740 hour and a labor cost of $0.1243; packing and shipping, 0.0098 hour and a labor cost of $0.0049. Total time cost per yard, 0.9788 hour; labor cost, $0.5096.

The weaver's rate per yard was $0.0462; number of looms tended per person, 6; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 109.5.

English mills.—Time expended per pound of tops, 0.0885 man-hour, labor cost, $0.0246; yarn per yard of finished cloth, time 0.4390 hour, labor cost $0.0847; dressing and weaving, time, 0.5345 hour, labor cost, $0.1575; finishing and dyeing, time, 0.4380 hour, labor cost, $0.1875; packing and shipping, time, 0.0395 hour, labor cost, $0.0173. Total time expended per yard, 1.4510 hours; labor cost, $0.4470.

The weaver's rate per yard was $0.0419; number of looms tended per person, 2; speed of looms, 130 picks per minute; yards produced per loom per week of 48 hours, 118.

German mills.—Time expended per pound of tops, 0.2180 man-hour, labor cost, $0.0324; yarn per yard of finished cloth, time, 0.8617 hour, labor cost, $0.0955; dressing and weaving, time, 0.3570 hour, labor cost, $0.1087; finishing and dyeing, time, 0.4070 hour, labor cost, $0.1174; packing and shipping, time, 0.0020 hour, labor cost, $0.0002. Total time expended per yard, 1.6277 hours; labor cost, $0.3218.

The weaver's rate per yard was $0.0506; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 93.

French mill.—The only data obtained for this sample from French mills were for dressing and weaving and finishing and dyeing. For this the figures show: Dressing and weaving, time, 0.6330 man-hour, labor cost, $0.0970; finishing and dyeing, time, 1.2170 hours, labor cost, $0.1900.

The weaver's rate was $0.0530 per yard; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 162.

SAMPLE NO. 8

Tropical silkoline of worsted and silk, 56 inches wide; weight, 7¾ ounces per yard. The loom analysis shows 2,688 warp ends of 2-ply No. 40 worsted yarn with silk thread $\frac{5}{16}$ inch apart; width in reed, 62.08 inches. The weft is 2-ply No. 40 worsted yarn, 46 picks to the inch.

American mill.—The time expended in production of tops was 0.1050 man-hour at a labor cost of $0.0630 per pound. The time consumed in making the yarn per yard of finished cloth was 0.3150 hour at a labor cost of $0.1938. The dressing and weaving required 0.2690 man-hours and a labor cost of $0.1475; finishing and dyeing, 0.2115 hour and a labor cost of $0.0960; packing and shipping, 0.0096 hour and a labor cost of $0.0048. Total time cost per yard, 0.8051 hour; labor cost, $0.4421.

The weavers' rate per yard was $0.0328; number of looms tended per person, 6; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 152.

English mill.—Time expended per pound of tops, 0.0970 man-hour, labor cost, $0.0277; yarn per yard of finished cloth, time 0.4779 hour, labor cost, $0.0913; dressing and weaving time, 0.5020 hour, labor cost $0.1297; finishing and dyeing, time 0.1210 hour, labor cost, $0.0349; packing and shipping, time 0.0550 hour, labor cost $0.0114. Total time expended per yard, 1.1559 hours; labor cost, $0.2673.

The weavers' rate per yard was $0.0459; number of looms per person, 2; number of picks per minute, 100; yards produced per loom per week of 48 hours, 126.

German mill.—Information for this sample was obtained from German mills for only the processes of dressing and weaving and finishing and dyeing. Figures for dressing and weaving were: Time, 1.4200 man-hours, labor cost, $0.2794; finishing and dyeing, time 0.8300 hour, labor cost, $0.1626.

The weavers' rate per yard was $0.0422; number of looms tended per person, 1; speed of looms, 75 picks per minute; yards produced per loom per week of 48 hours, 56.7.

SAMPLE NO. 9

Cotton and worsted lining cloth, 35 inches wide; weight, 3.55 ounces per yard. The loom analysis shows 2,275 warp ends of single thread No. 45 combed cotton yarn; width in reed, 40.3 inches. The weft is single thread No. 22 worsted yarn, 52 picks to the inch.

American mill.—Information for this sample was obtained only for tops, weft, dressing and weaving, finishing and dyeing, and packing and shipping. Cotton yarn for the warp was purchased. The time expended in production of tops was 0.1050 man-hour at a labor cost of $0.0360 per pound. The time consumed in making the yarn for the weft per yard of finished cloth was 0.0397 hour at a labor cost of $0.0167. The dressing and weaving required 0.0667 man-hour, and a labor cost of $0.0413; finishing and dyeing, 0.0789 hour, and a labor cost of $0.0358; packing and shipping, 0.0092 hour and a labor cost of $0.0046.

The weaver's rate per yard was $0.0154; number of looms tended per person, 12; speed of looms, 145 picks per minute; yards produced per loom per 48-hour week, 146.

English mills.—Time expended per pound of tops, 0.0600 man-hour, labor cost $0.0193; filling yarn, time 0.4010 hour, labor cost $0.0558; dressing and weaving, time 0.2513 hour, labor cost $0.0607; finishing and dyeing, time 0.5700 hour, labor cost $0.0656; packing and shipping, time 0.0275 hour, labor cost $0.0138.

The weaver's rate per yard was $0.0299; number of looms tended per person, 2; speed of looms, 142 picks per minute; yards produced per loom per week of 48 hours, 147.

SAMPLE NO. 10

Fancy Vigoureux worsted, 56 inches wide; weight, 12 ounces per yard. The loom analysis shows 3,472 warp ends of 2-ply No. 34 worsted yarn; width in reed, 67½ inches. The weft is single thread No. 17 worsted yarn, 60 picks to the inch.

American mill.—The time expended in production of tops was 0.1160 man-hour at a labor cost of $0.1010 per pound. The time consumed in making the yarn per yard of finished cloth was 0.4193 hour at a labor cost of $0.2083. The dressing and weaving required 0.3500 man-hour and a labor cost of $0.2060; finishing and dyeing, 0.0900 hour, and a labor cost of $0.0390; packing and shipping, 0.0040 hour and a labor cost of $0.0020. Total time cost per yard, 0.8633 hour; labor cost, $0.4553.

The weaver's rate per yard was $0.1300; number of looms tended per person, 2; speed of looms, 108 picks per minute; yards produced per loom per week of 48 hours, 104.

English mill.—Information for this sample was obtained from English and German mills for only the processes of dressing and weaving, and finishing and dyeing. Figures for English dressing and weaving were: Time 0.6300 man-hour, labor cost $0.1447; finishing and dyeing, time 0.4300 hour, labor cost $0.0924. The weaver's rate was $0.1096 per yard; number of looms tended per person, 1; speed of looms, 100 picks per minute; yards produced per loom per 48-hour week, 100.

German mill.—Figures for dressing and weaving were: Time 1.0400 man-hours, labor cost $0.2535; finishing and dyeing, time, 0.9000 hour, labor cost, $0.2083.

The weaver's rate per yard was $0.0446; number of looms tended per person, 1; speed of looms, 75 picks per minute; yards produced per loom per 48-hour week, 67.

SAMPLE NO. 11

Woolen cheviot, 56 inches wide; weight, 12 ounces per yard. The loom analysis shows 1,918 warp ends of 3⅛ run woolen yarn; width in reed, 68½ inches. The weft is 3⅛ run woolen yarn, 34 picks to the inch.

American mill.—Time consumed in making the yarn per yard of finished cloth 0.1591 man-hour, labor cost $0.0890; dressing and weaving, time 0.2490 hour, labor cost $0.1400; finishing and dyeing, time 0.0690 hour, labor cost $0.0290; packing and shipping, time 0. 0050 hour, labor cost $0.0020. Total time cost per yard, 0.4821 hour; labor cost $0.2600.

The weaver's rate per yard was $0.0830; number of looms tended per person, 2; speed of looms, 100 picks per minute; yards produced per loom per 48-hour week, 175.

English mill.—Time consumed in making yarn, per yard of finished cloth 0.1850 man-hour, labor cost $0.0528; dressing and weaving, time 0.5104 hour, labor cost $0.1259; finishing and dyeing, time 0.1955 hour, labor cost $0.0471; packing and shipping, time 0.0087 hour, labor cost $0.0022. Total time cost per yard, 0.8996 hour; labor cost, $0.2280.

The weaver's rate per yard was $0.0834; number of looms tended per person, 1; speed of looms, 96 picks per minute; yards produced per loom per week of 48 hours, 167.

French mill.—Time consumed in making yarn per yard of finished cloth 0.2941 man-hour, labor cost $0.0375; dressing and weaving, time 0.3910 hour, labor cost $0.0470; finishing and dyeing, time 0.2120 hour, labor cost $0.0255. Total time expended per yard, 0.8971 hour; labor cost, $0.1100.

Weaver's rate per yard was $0.0422; number of looms tended per person, 1; speed of looms, 96 picks per minute; yards produced per week of 48 hours, 170.

SAMPLE NO. 12

Cassimere, 56 inches wide, weighing 12 ounces to the yard. The loom analysis shows 2,408 warp ends of 3¾ run woolen yarn; width in reed, 70 inches. The weft is 3¾ run woolen yarn, 40 picks to the inch.

American mill.—Time consumed in making yarn per yard of finished cloth 0.1413 man-hour, labor cost $0.0805; dressing and weaving, time 0.3240 hour, labor cost $0.1840; finishing and dyeing, time 0.0990 hour, labor cost $0.0410; packing and shipping, time 0.0040 hour, labor cost $0.0020. Total time cost per yard, 0.5683 hour; labor cost, $0.3075.

The weaver's rate per yard was $0.1026; number of looms tended per person, 2; speed of looms, 100 picks per minute; yarn produced per loom per week of 48 hours, 147.

English mill.—Time consumed in making yarn per yard of finished cloth 0.2191 man-hour; labor cost $0.0581; dressing and weaving, time 0.5755 hour, labor cost $0.1458; finishing and dyeing, time 0.1955 hour, labor cost $0.0471; packing and finishing, time 0.0087 hour, labor cost $0.0022. Time expended per yard, 0.9988 hour; labor cost, $0.2532.

The weaver's rate per yard was $0.0928; number of looms tended per person, 1; speed of looms, 96 picks per minute; yards produced per loom per week of 48 hours, 152.

French mill.—Time consumed in making yarn per yard of finished cloth, 0.3165 man-hour, labor cost $0.0404; dressing and weaving, time 0.4600 hour, labor cost $0.0553; finishing, dyeing, mending, and cleaning, time 0.2120 hour, labor cost $0.0255. Total time expended per yard, 0.9885 hour; labor cost, $0.1212.

Weaver's rate per yard was $0.0496; number of looms tended per person, 1; speed of looms, 96 picks per minute; yards produced per loom per week of 48 hours, 144.

SAMPLE NO. 13

Fancy worsted goods, 56 inches wide; weight, 13½ ounces to the yard. The loom analysis shows 4,144 warp ends of 2-ply, No. 36 worsted yarn; width in reed, 68½ inches. The weft is single thread No. 20 worsted yarn, 70 picks to the inch.

American mill.—The time expended in production of tops was 0.1935 man-hour, at a labor cost of $0.0850 per pound. The time consumed in making and dyeing the yarn per yard of finished cloth was 0.6278 hour and the labor cost $0.2515. The dressing and weaving required 0.7418 man-hour and a labor cost of $0.4049; finishing, packing, and shipping time 0.1666 hour and a labor cost of $0.0702. Total time cost per yard, 1.5362 hours; labor cost, $0.7266.

The weaver's rate per yard was $0.1520; number of looms tended per person, 2; speed of looms, 115 picks per minute; yards produced loom per 48-hour week, 88.

English mills.—Time expended per pound of tops, 0.0970 man-hour, labor cost $0.0277; yarn per yard of finished cloth, time 0.5240 hour, labor cost $0.0985; dressing and weaving, time 0.7110 hour, labor cost $0.1740; finishing and dyeing, time 0.2790 hour, labor cost $0.0916; packing and shipping, time 0.0550 hour, labor cost $0.0114. Total time expended per yard, 1.5718 hours; labor cost $0.3761.

The weaver's rate per yard was $0.0936; number of looms tended per person, 2; speed of looms, 109 picks per minute; yards produced per loom per week of 48 hours, 83.3

German mills.—Time expended per pound of tops, 0.2180 man-hour, labor cost $0.0324; yarn per yard of finished cloth, time 0.8492 hour, labor cost $0.0956; dressing and weaving, time 1.3160 hours, labor cost $0.2751; finishing and dyeing, time 1.0735 hours, labor cost $0.1561; packing and shipping, time 0.0020 hour, labor cost $0.0002. Total time expended per yard, 3.2407 hours; labor cost, $0.5270.

The weaver's rate per yard was $0.0834; number of looms tended per person, 1; speed of looms, 78 picks per minute; yards produced per loom per week of 48 hours, 66.2

SAMPLE NO. 14

Worsted warp with wool-filled cloth, 56 inches wide; weight, 12 ounces per yard. The loom analysis shows 3,248 warp ends of 2-ply No. 36 worsted yarn; width in reed, 68¼ inches. The weft is 5-run wool, 56 picks to the inch.

American mill.—The time expended in production of tops was 0.1935 man-hour at a labor cost of $0.0850 per pound. The time consumed in making the yarn per yard of finished cloth was 0.5500 hour and the labor cost $0.2578. The dressing and weaving required 0.6531 man-hour and a labor cost of $0.3240; finishing, dyeing, packing and shipping, 0.1660 hour and a labor cost of $0.0702. Total time cost per yard, 1.3691 hours; labor cost, $0.6520.

The weaver's rate per yard was $0.1210; number of looms tended per person, 2; speed of looms, 112 picks per minute; yards produced per loom per week of 48 hours, 110.

German mills.—Time expended per pound of tops, 0.2180 man-hour, labor cost $0.0324; yarn per yard of finished cloth, time

0.5360 hour, labor cost $0.0965; dressing and weaving, time 0.6725 hour, labor cost $0.1609; finishing and dyeing, time 1.1070 hours, labor cost $0.1222; packing and shipping, time 0.0020 hour, labor cost $0.0002. Total time expended per yard, 2.3929 hours; labor cost, $0.3906.

The weaver's rate per yard was $0.0802; number of looms tended per person, 2; speed of looms, 100 picks per minute; yards produced per loom per week of 48 hours, 92.

SAMPLE NO. 15

Fancy woolen cloaking, 56 inches wide; weight, 18 ounces per yard. The loom analysis shows 1,344 warp ends of 1¼ run woolen yarn; width in reed, 69 inches. The weft is 1¼ run woolen yarn, 20 picks to the inch.

American mill.—Time consumed in making the yarn per yard of finished cloth, 1.3119 man-hours, labor cost $0.0766; dressing and weaving, time 0.2630 hour, labor cost $0.1470; finishing and dyeing, time 0.0480 hour, labor cost $0.0200; packing and shipping, time 0.0040 hour, labor cost $0.0020. Total time cost per yard, 1.6269 hours; labor cost, $0.2456.

The weaver's rate per yard was $0.1080; number of looms tended per person, 1; speed of looms, 100 picks per minute; yards produced per loom per week of 48 hours, 275.

English mill.—Time consumed in making yarn per yard of finished cloth, 0.1405 man-hour, labor cost $0.0631; dressing and weaving, time 0.3942 hour, labor cost $0.0881; finishing and dyeing, time 0.2226 hour, labor cost $0.0536; packing and shipping, time 0.0087 hour, labor cost $0.0022. Total time cost per yard, 0.7660 hour, labor cost, $0.2070.

The weaver's rate per yard was $0.0623; number of looms tended per person, 1; speed of looms, 96 picks per minute; yards produced per loom per week of 48 hours, 188.

SAMPLE NO. 16

Woolen cloaking, 56 inches wide; weight, 18 ounces per yard. The loom analysis shows 1,848 warp ends of 1¾ run woolen yarn; width in reed, 73 inches. The weft is 1¾ run woolen yarn, 27 picks to the inch.

American mill.—Time consumed in making the yarn per yard of finished cloth, 0.1001 man-hour, labor cost $0.0550; dressing and weaving, time 0.3350 hour, labor cost $0.1900; finishing and dyeing, time 0.1130 hour, labor cost $0.0530; packing and shipping, time 0.0040 hour, labor cost $0.0020. Total time cost per yard, 0.5521 hour; labor cost, $0.3000.

The weaver's rate per yard was $0.1250; number of looms tended per person, 1; speed of looms, 100 picks per minute; yards produced per loom per week of 48 hours, 230.

German mill.—Time consumed in making yarn per yard of finished cloth, 0.0780 man-hour, labor cost $0.0405; dressing and weaving, time 0.5190 hour, labor cost $0.0715; finishing and dyeing, time 0.3020 hour, labor cost $0.0825; packing and shipping, time 0.0020

hour, labor cost $0.0002. Total time cost per yard, 0.9010 hour; labor cost, $0.1947.

The weaver's rate per yard was $0.0537; number of looms tended per person, 1; speed of looms, 80 picks per minute; yards produced per loom per week of 48 hours, 157.

SAMPLE NO. 17

Worsted warp broadcloth, 56 inches wide; weight, 8.7 ounces per yard. The loom analysis shows 3,360 warp ends of single thread No. 30 worsted yarn; width in reed, 71 inches. The weft is 5 run woolen yarn, 48 picks to the inch.

American mill.—Information for this sample was obtained for only dressing and weaving, finishing and dyeing, and packing and shipping. The time expended on dressing and weaving was 0.3490 man-hour, and the labor cost $0.2050; finishing and dyeing, 0.1130 hour and the labor cost $0.0860; packing and shipping, 0.0040 hour and the labor cost $0.0020.

The weaver's rate per yard was $0.1140; number of looms tended per person, 2; speed of looms, 100 picks per minute; yards produced per loom per week of 48 hours, 126.

English mill.—Time expended on dressing and weaving, 0.5970 man-hour, labor cost $0.0999; finishing and dyeing, time 0.6370 hour, labor cost $0.0720; packing and shipping, time 0.0270 hour, labor cost $0.0257.

The weaver's rate per yard was $0.0711; number of looms tended per person, 1; speed of looms, 80 picks per minute; yards produced per loom per week of 48 hours, 140.

German mill.—Data for dressing and weaving only were obtained for this sample. Time cost was 0.2200 man-hour, labor cost $0.1047. The weaver's rate per yard was $0.0500; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 110.

SAMPLE NO. 18

Cotton warp suiting, 56 inches wide; weight, 12 ounces per yard. The loom analysis shows 3,472 warp ends of 2-ply No. 24 cotton yarn; width in reed, 65.4 inches. The weft is single thread No. 17 worsted yarn, 58 picks to the inch.

American mill.—Time consumed in dressing and weaving, 0.6531 man-hour, labor cost $0.3240; finishing, dyeing, packing, and shipping, time 0.1666 hour, labor cost $0.0702. The weaver's rate per yard was $0.1220; number of looms tended per person, 2; speed of looms, 112 picks per minute; yards produced per loom per week of 48 hours, 108.

English mills.—Time consumed in dressing and weaving, 0.6900 man-hour, labor cost $0.1762; finishing, dyeing, packing, and shipping, time 0.2721 hour, labor cost $0.0717.

The weaver's rate per yard was $0.1235; number of looms tended per person, 1; speed of looms, 98 picks per minute; yards produced per loom per week of 48 hours, 102.

SAMPLE NO. 19

Worsted crêpe, 54 inches wide; weight, 6¼ ounces per yard. The loom analysis shows 3,521 warp ends of single No. 35 worsted yarn; width in reed, 69.7 inches. The weft is single thread No. 20 worsted yarn, 49 picks to the inch.

American mill.—The time consumed in dressing and weaving was 0.6200 man-hour and the labor cost $0.3832.

The weaver's rate per yard was $0.1515; number of looms tended per person, 2; speed of looms, 112 picks per minute; yards produced per loom per week of 48 hours, 110.

German mill.—Time consumed in dressing and weaving, 0.3200 man-hour, labor cost $0.1595. The weaver's rate per yard was $0.0738; number of looms tended per person, 2; speed of looms, 103 picks per minute; yards produced per loom per week of 48 hours, 77.

SAMPLE NO. 20

Worsted challis, 54 inches wide; weight, 4 ounces per yard. The loom analysis shows 3,996 warp ends of single thread No. 45 AAA worsted yarn; width in reed, 60 inches. The weft is single thread No. 62 AAA worsted yarn, 63 picks to the inch.

American mill.—The time consumed in dressing and weaving was 0.5300 man-hour and the labor cost $0.3281.

The weaver's rate per yard was $0.1480; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 102.

German mill.—The time consumed in dressing and weaving was 0.2500 man-hour and the labor cost $0.1285.

The weaver's rate per yard was $0.0595; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 99.

SAMPLE NO. 21

Broadcloth, 54 inches wide; weight, 10 ounces per yard. The loom analysis shows 3,645 warp ends of single thread No. 27 A/B worsted yarn; width in reed, 68.7 inches. The weft is 4-run woolen yarn, 45.5 picks to the inch.

American mill.—Time consumed in dressing and weaving was 0.5100 man-hour, labor cost $0.3095; finishing and dyeing, time 0.4400 hour, labor cost $0.2484.

The weaver's rate per yard was $0.1215; number of looms tended per person, 2; speed of looms, 112 picks per minute; yards produced per loom per week of 48 hours, 124.

English mill.—Time consumed in dressing and weaving, 0.5630 man-hour, labor cost $0.0947; finishing and dyeing, time 0.6350 hour, labor cost $0.0720.

The weaver's rate per yard was $0.0690; number of looms tended per person, 1; speed of looms, 80 picks per minute; yards produced per week of 48 hours, 140.

German mill.—Time consumed in dressing and weaving, 0.8800 man-hour, labor cost $0.1573; finishing and dyeing, time 0.7430 hour, labor cost $0.1114.

The weaver's rate per yard was $0.0869; number of looms tended per person, 1; speed of looms, 80 picks per minute; yards produced per loom per week of 48 hours, 98.

SAMPLE NO. 22

Worsted serge, 56 inches wide; weight, 7.97 ounces per yard. The loom analysis shows 3,416 warp ends of single thread No. 24 worsted yarn; width in reed, 61.51 inches. The weft is single thread No. 27 worsted yarn, 65 picks to the inch.

American mill.—The time consumed in dressing and weaving was 0.3611 man-hour and the labor cost $0.2040.

The weaver's rate per yard was $0.0737; number of looms tended per person, 4; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 102.

German mill.—Time consumed in dressing and weaving, 0.2500 man-hour; labor cost, $0.1309.

The weaver's rate per yard was $0.0619; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 99.

SAMPLE NO. 23

Worsted Panama cloth, 54 inches wide; weight, 6.89 ounces per yard. The loom analysis shows 2,538 warp ends of 2-ply No. 43 worsted yarn; width in reed, 64.35 inches. The weft is single thread No. 26 worsted yarn, 54 picks to the inch.

American mill.—Time consumed in dressing and weaving, 0.2372 man-hour; labor cost, $0.1340.

The weaver's rate per yard was $0.0401; number of looms tended per person, 6; speed per loom, 120 picks per minute; yards produced per loom per week of 48 hours, 123.

English mill.—Time consumed in dressing and weaving, 0.1746 man-hour; labor cost, $0.0564.

The weaver's rate per hour was $0.0426; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 140.

German mill.—Time consumed in dressing and weaving, 0.2200 man-hour; labor cost, $0.1071.

The weaver's rate per yard was $0.0524; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 110.

SAMPLE NO. 24

Worsted serge, 44 inches wide; weight, 7.62 ounces per yard. The loom analysis shows 3,212 warp ends of 2-ply No. 42 worsted yarn; width in reed, 49.42 inches. The weft is single thread No. 30 worsted yarn, 73 picks to the inch.

American mill.—The time consumed in dressing and weaving was 0.2520 man-hour and the labor cost, $0.1424.

The weaver's rate per yard was $0.0521; number of looms tended per person, 6; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 96.

English mill.—The time consumed in dressing and weaving was 0.6355 man-hour and the labor cost $0.1612.

The weaver's rate per yard was $0.0445; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 140.

German mill.—The time consumed in dressing and weaving was 0.2500 man-hour, and the labor cost $0.1309.

The weaver's rate per yard was $0.0619; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 99.

SAMPLE NO. 25

Worsted mousseline de laine, 45 inches wide; weight, 3.45 ounces per yard. The loom analysis shows 3,240 warp ends of single thread No. 49 worsted yarn; width in reed, 53.56 inches. The weft is single thread No. 69 worsted yarn, 77 picks to the inch.

American mill.—The time consumed in dressing and weaving was 0.5414 man-hour, and the labor cost $0.3059.

The weaver's rate per yard was $0.1803; number of looms tended per person, 2; speed of looms, 125 picks per minute; yards produced per loom per week of 48 hours, 82.

English mill.—The time consumed in dressing and weaving was 0.5125 man-hour and the labor cost $0.2052.

The weaver's rate per yard was $0.0934; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 120.

German mill.—The time consumed in dressing and weaving was 0.2800 man-hour and the labor cost $0.1380.

The weaver's rate per yard was $0.0643; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 88.

SAMPLE NO. 26

Worsted serge, 56 inches wide; weight, 8.43 ounces per yard. The loom analysis shows 3,192 warp ends of single thread No. 26 worsted yarn; width in reed, 61.16 inches. The weft is single thread No. 22 worsted yarn, 68 picks to the inch.

American mill.—The time consumed in dressing and weaving was 0.4349 man-hour and the labor cost $0.2457.

The weaver's rate per yard was $0.1336; number of looms tended per person, 2; speed of looms, 125 picks per minute; yards produced per loom per week of 48 hours, 102.5.

English mill.—Time consumed in dressing and weaving was 0.6484 man-hour; labor cost, $0.1750.

The weaver's rate per yard was $0.0457; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 140.

German mill.—Time consumed in dressing and weaving was 0.2800 man-hour; labor cost, $0.1380.

The weaver's rate per yard was $0.0643; number of looms tended per person, 2; speed of loom, 120 picks per minute; yards produced per loom per week of 48 hours, 88.

SAMPLE NO. 27

Worsted Botany serge, 56 inches wide; weight, 6.82 ounces per yard. The loom analysis shows 5,320 warp ends of single thread No. 39 worsted yarn; width in reed, 64.94 inches. The weft is single thread No. 46 worsted yarn, 81 picks to the inch.

American mill.—The time consumed in dressing and weaving was 0.5476 man-hour and the labor cost $0.3094.

The weaver's rate per yard was $0.1694; number of looms tended per person, 2; speed of looms, 125 picks per minute; yards produced per loom per week of 48 hours, 81.

English mill.—The time consumed in dressing and weaving was 0.6716 man-hour and the labor cost $0.2164.

The weaver's rate per yard was $0.0556; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 120.

German mill.—The time consumed in dressing and weaving was 0.3200 man-hour and the labor cost $0.1737.

The weaver's rate per yard was $0.0833; number of looms tended per person, 2; speed of looms, 120 picks per minute; yards produced per loom per week of 48 hours, 77.

Weavers' Rates Per Yard and Productivity of Looms

IT WAS found that there was a wide variation in the rate per yard paid to the weavers for weaving the cloth and also a considerable difference in the number of looms tended by each weaver, as well as a difference in the speed of the looms. In the United States it is quite common for weavers on worsted cloth operating automatic looms to attend 4, 6, 8, and in some instances as many as 12 looms. In European countries the automatic loom is installed to only a very limited extent, and it is seldom that a weaver attends more than two looms. In many instances the weaver attends only one loom. Table 1 shows for each sample procured in each of the countries the weaver's wage rate per yard, the number of looms tended by each weaver, the speed of the looms, and the yards of cloth produced per loom per week of 48 hours.

TABLE 1.—WAGE RATE OF WEAVERS, LOOMS TENDED, SPEED OF LOOMS, AND YARDS PRODUCED PER LOOM

Establishment number	Weavers' wage rate per yard	Number of looms tended	Speed of looms in picks per minute	Yards produced per loom in 48-hour week
United States:				
No. 1	$0.0457	6	120	110
No. 2	.0431	6	120	115
No. 3	.1236	2	125	106
No. 4	.0922	2	120	145
No. 5	.1144	2	125	109
No. 6	.1078	2	125	126.5
No. 7	.0462	6	120	109.5
No. 8	.0328	6	120	152
No. 9	.0154	12	145	146
No. 10	.1300	2	108	104
No. 11	.0830	2	100	175
No. 12	.1026	2	100	147
No. 13	.1520	2	115	88

TABLE 1.—WAGE RATE OF WEAVERS, LOOMS TENDED, SPEED OF LOOMS, AND YARDS PRODUCED PER LOOM—Continued

Establishment number	Weavers' wage rate per yard	Number of looms tended	Speed of looms in picks per minute	Yards produced per loom in 48-hour week
United States—Continued.				
No. 14	$0.1210	2	112	110
No. 15	.1080	1	100	275
No. 16	.1250	1	100	230
No. 17	.1140	2	100	126
No. 18	.1220	2	112	108
No. 19	.1515	2	112	110
No. 20	.1480	2	120	102
No. 21	.1215	2	112	124
No. 22	.0737	4	120	102
No. 23	.0401	6	120	123
No. 24	.0521	6	120	96
No. 25	.1803	2	125	82
No. 26	.1336	2	125	102.5
No. 27	.1694	2	125	81
England:				
No. 1	.0466	2	120	117
No. 2	.0412	2	120	127.8
No. 3	.0918	2	110	93.9
No. 4	.0390	2	130	134
No. 5	.0445	2	130	116.5
No. 6	.0654	2	108	110.5
No. 7	.0419	2	130	118
No. 8	.0459	2	100	126
No. 9	.0299	2	142	147
No. 10	.1096	1	100	100
No. 11	.0834	1	96	167
No. 12	.0928	1	96	152
No. 13	.0936	2	109	83.3
No. 17	.0623	1	96	188
No. 19	.0711	1	80	140
No. 20	.1235	1	98	102
No. 23	.0690	1	80	140
No. 25	.0426	2	120	140
No. 26	.0445	2	120	140
No. 27	.0934	2	120	120
No. 28	.0457	2	120	140
No. 29	.0556	2	120	120
Germany:				
No. 1	.0411	1	90	77
No. 2	.0405	1	90	97.8
No. 3	.0566	2	105	84.1
No. 7	.0506	2	120	93
No. 8	.0422	1	75	56.7
No. 10	.0466	1	75	67
No. 13	.0834	1	88	66.2
No. 14	.0802	2	100	92
No. 18	.0537	1	80	157
No. 19	.0500	2	120	110
No. 21	.0738	2	103	77
No. 22	.0595	2	120	99
No. 23	.0869	1	80	98
No. 24	.0619	2	120	99
No. 25	.0524	2	120	110
No. 26	.0619	2	120	99
No. 27	.0643	2	120	88
No. 28	.0643	2	120	88
No. 29	.0833	2	120	77
France:				
No. 1	.0580	2	120	157
No. 2	.0495	2	120	173
No. 4	.0440	2	120	192
No. 7	.0530	2	120	162
No. 11	.0422	1	96	170
No. 12	.0496	1	96	144

Wages and Hours of Labor

United States

TABLE 2 shows, by occupation, the average wages and hours of labor in the woolen and worsted industry in the United States in 1926 as determined in a study made by the Bureau of Labor Statistics in that year. No study of wages was made in the woolen and worsted industry in 1927, but as there were no radical changes in the wages in that industry in 1927, the 1926 figures may be accepted as approximately the wages paid in 1927.

TABLE 2.—AVERAGE WAGES AND HOURS OF LABOR IN THE WOOLEN AND WORSTED INDUSTRY IN THE UNITED STATES, BY OCCUPATIONS, 1926

Occupation	Sex	Number of establishments	Number of employees	Average full-time hours per week	Average earnings per hour	Average full-time earnings per week
Wool sorters	Male	30	445	50.8	$0.713	$36.22
	Female	2	37	48.0	.698	33.50
Wool-washer tenders	Male	33	122	50.2	.463	23.24
Picker tenders	do	56	245	49.7	.438	21.77
Card tenders	do	70	531	49.8	.419	20.87
	Female	19	166	48.7	.365	17.78
Card strippers	Male	73	381	49.5	.464	22.97
Card grinders	do	18	36	50.9	.537	26.64
Gill-box tenders	do	13	209	50.1	.405	20.29
	Female	21	296	51.0	.326	16.63
Comber tenders	Male	10	171	50.5	.478	24.14
	Female	17	163	49.9	.378	18.86
Drawing-frame tenders	Male	9	271	48.8	.380	18.54
	Female	26	1,753	49.7	.352	17.49
Spinners, mule	Male	69	1,249	49.7	.695	34.54
Spinners, frame	do	1	24	48.0	.371	17.81
	Female	23	1,228	49.8	.362	18.03
Doffers	Male	6	52	48.8	.280	13.66
	Female	22	701	49.9	.280	13.97
Twister tenders	do	65	1,117	49.7	.364	18.09
Spooler tenders	do	95	1,283	49.1	.391	19.20
Dresser tenders	Male	95	545	49.1	.705	34.62
Drawers-in	do	22	59	50.2	.666	33.43
	Female	84	533	48.9	.497	24.30
Loom fixers	Male	99	748	49.0	.807	39.54
Weavers	do	97	5,528	48.9	.652	31.88
	Female	89	2,748	49.2	.600	29.52
Cloth inspectors	Male	23	235	48.3	.563	27.19
	Female	21	103	49.6	.421	20.88
Burlers	do	90	1,722	49.3	.381	18.78
Menders	do	91	2,121	48.6	.507	24.64
Perchers	Male	91	462	49.1	.559	27.45
	Female	16	97	48.6	.482	23.43
Fullers	Male	75	223	49.4	.464	22.92
Washer tenders, cloth	do	85	353	49.7	.442	21.97
Dryer tenders, cloth	do	84	222	49.9	.444	22.16
Truckers	do	93	1,236	48.9	.408	19.95
Laborers, dyehouse	do	82	1,008	49.4	.445	21.98
Other employees	do	112	7,797	49.4	.481	23.76
	Female	105	3,750	49.4	.346	17.09
All employees	Male	112	22,152	49.3	.545	26.87
	Female	112	17,818	49.3	.418	20.61
All employees, male and female		112	39,970	49.3	.491	24.21

England

Owing to the limited amount of time that could be devoted to the survey no attempt was made to compile actual wages or earnings of employees in the various occupations of the industry. The following wage agreement, however, shows the method of establishing the basic wage rates on which the earnings of employees in Great Britain are determined:

Labor agreements in the woolen and worsted industry in England.—Wages and working conditions in the woolen and worsted industry in Great Britain are controlled by the National Wool (and Allied) Textile Industrial Council, a federated body composed of the affiliated organizations of employers and workers equally represented. The council covers all processes in the industry from the raw material to the finished piece.

District councils subordinate to and organized by the national council function for it in their assigned geographic areas. They negotiate their own wage agreements, subject to ratification by the national council.

Disputes are referred to an arbitration court within the council, for which definite machinery is provided. It is "obligatory on both employers and workmen to honor the award of the arbitration court" or of the umpire of its selection.

The arbitration court fixed a scale of wages early in 1919 which was modified shortly afterward when the industry changed from a 55½-hour to a 48-hour week. As then adjusted, this scale remains the basic scale in the annual agreements negotiated by the district and the national councils.

Additions to the basic scale fluctuated variously until the 1921-22 agreement was made. This agreement provided for a 10 per cent addition to the basic rate for time workers in nearly all branches of the industry, which increase has been maintained unchanged to the present.

In addition to time rates and piece prices, workers are paid a "cost-of-living wage" which was begun during the war period. This was at first a flat sum for adult male workers, for adult female workers, and for minors. Later it became a sliding scale based on the cost-of-living index figure as published quarterly in the Ministry of Labor Gazette. The great fluctuation in that system made it impractical, and in the 1922-23 agreement the sliding scale was abolished and a definite "cost-of-living percentage" was established which is still in force. As at present applied this percentage is: For time workers, 72½ per cent of the weekly earnings; for piece workers, 63¾ per cent; for pressers and blanket raisers, 55 per cent. In the case of time workers the cost-of-living percentage is limited by a fixed maximum.

Wages in general in the industry, then, are the basic hourly wage rates plus 10 per cent plus 72½ per cent, or basic piece price plus 63¾ per cent. All agreements and decisions accede to the principle that piece prices shall be such as to enable an average worker to earn a minimum of 25 per cent above the net basic time rate. It is estimated that 45 per cent of the workers in the industry are in piecework occupations.

Night workers receive a slightly higher rate on both time and piece work than day workers. Overtime rates in the agreements vary from a fixed additional sum per hour or per piece, to time and a quarter and time and a half, with double time for Sunday and holiday work. The normal work week is 48 hours, and the workday is from 7 a. m. to 5 p. m., with recesses for breakfast and lunch.

Separate agreements covering minors in worsted spinning and in woolen and worsted manufacturing establish minimum rates and a sliding scale for time workers based on age. These rates also are

basic, subject to the 10 per cent increase and the "cost-of-living percentage over all."

Wool sorters are chiefly pieceworkers, piece prices being based on a 240-pound pack, with a sliding scale for the different grades of raw wool. Earnings per week, including the cost-of-living percentage, average £4 10s. Time workers in wool sorting average £3 8s. 9d. for a full week of 48 hours.

In wool combing and kindred occupations minimum weekly wages are established by agreement, to which is added a bonus on production. This bonus is dealt with in detail in a supplementary agreement known as the "Bonus on production scheme." Pounds-per-operative-hour is the unit of production, and the amounts earned run from 5 to 50 per cent of the weekly wages. Actual earnings in the wool-combing department range from 54s. 10d. ($13.33) to 56s. 1d. ($13.64) for male workers, and from 34s. 2d. ($8.31) to 35s. 10d. ($8.71) for female workers.

Full-time weekly earnings in worsted spinning and in woolen and worsted manufacture are as follows:

TABLE 3.—FULL-TIME WEEKLY EARNINGS IN WORSTED SPINNING AND IN WOOLEN AND WORSTED MANUFACTURE

Occupation	Time rates		Piecework earnings	
	English currency	U. S. currency	English currency	U. S. currency
Worsted spinning:	s. d.		s. d.	
Drawers, female	29 8.5	$7.22		
Twisters, female	28 9.5	7.00		
Winders, female	26 10.5	6.53		
Reelers, female	29 8.5	7.22		
Spinners, female	23 8.5	5.76		
Warpers and beamers, female	32 6	7.90		
Warehousemen	55 8	13.54		
Manufacturing:				
Warpers, male			60 0	$14.60
Warpers, female			36 0	8.75
Sizers	54 10	13.33		
Piecers, boys and youths	30 3	7.35		
Mule spinners			63 0	15.32
Weavers, male			60 0	14.60
Weavers, female			36 0	8.75
Menders, female			36 0	8.75
Willeyers and fettlers	54 10	13.33		
Scribbler feeders, female	32 3	7.84		
Millers, scourers, dyers, and finishers	54 10	13.33		
Combing, spinning, and power loom overlookers	77 5	18.84		

Trade agreements in the dyeing and finishing branch of the industry differ in some respects from those covering prior processes. Under the Yorkshire agreement the cost-of-living wage is adjusted up or down quarterly in conformity with fluctuations in the cost-of-living index figure appearing in the Ministry of Labor Gazette. In the Lancashire agreement the cost-of-living wage for the district is a flat rate per week.

Because of short-time work and greatly reduced earnings, operatives in bleaching, dyeing, and finishing appealed to the arbitration court in 1924 for an increase of 10 per cent over the basic scale. The decision was left to an umpire, who declared an award in lieu of the percentage increase demanded of 2s. ($0.48) increase per week

for men and 1s. 3d. ($0.30) for women. The basic rate plus the McKenzie award plus the cost-of-living wage, which, as before stated, is a sliding scale in one district and a fixed sum in another, aggregate weekly earnings of 53s. 10d. ($13.10) for adult male workers and 20s. 10d. ($5.07) for youths.

Germany

An official investigation of wages and hours of labor in the German textile industry was made as of September, 1927, and covered the period of this study. The results were published in Wirtschaft und Statistik (1. März-Heft, 1928, p. 163), the official organ of the Statistisches Reichsamt. The data relating to the woolen and worsted industry are given in full in Table 4. The report states that, as a whole, the survey covered 21 per cent of the workers in the localities included.

TABLE 4.—AVERAGE WEEKLY HOURS AND HOURLY EARNINGS IN THE WOOLEN AND WORSTED INDUSTRY IN GERMANY, 1927

Worsted spinning (Kammgarnspinnerei)

Occupation and locality	Number of employees	Average hours per week		Average earnings per hour	
		Including overtime	Overtime	Including overtime and social allowances	Excluding overtime and social allowances
Spinners, male:					
Augsburg	67	50.4	2.6	$0.2159	$0.2130
Kaiserslautern	71	51.9	5.7	.2359	.2294
Leipzig	77	49.5	2.8	.2161	.2140
Average	215	50.6	3.7	.2228	.2190
Spinners, female:					
Augsburg	84	46.4	0.0	.1323	.1323
Kaiserslautern	47	49.8	5.4	.1240	.1204
Leipzig	597	49.2	2.2	.1269	.1257
Stuttgart	115	51.9	5.0	.1264	.1242
Average	843	49.4	2.6	.1271	.1259
Helpers, male:					
Augsburg	210	50.6	3.3	.1547	.1523
Kaiserslautern	53	51.1	6.2	.1618	.1573
Leipzig	267	52.7	5.3	.1656	.1624
Average	530	51.7	4.6	.1611	.1578
Helpers, female:					
Augsburg	220	49.1	2.1	.1054	.1042
Kaiserslautern	27	50.3	5.6	.1126	.1095
Leipzig	156	51.4	4.0	.1016	.0997
Average	403	50.1	3.1	.1042	.1028

Woolen spinning (Streichgarnspinnerei)

Spinners, male:					
Aachen	11	56.9	8.9	$0.2301	$0.2209
Forst	185	49.9	2.8	.1980	.1954
M. Gladbach	29	52.7	5.1	.1833	.1790
Average	225	50.6	3.4	.1978	.1937
Spinners, female:					
Aachen	199	50.2	3.1	.1138	.1119
Forst	149	49.8	2.8	.1502	.1485
M. Gladbach	8	48.9	2.1	.1752	.1738
Average	256	49.9	2.9	.1369	.1349
Helpers, male:					
Aachen	10	53.6	5.6	.1464	.1428
M. Gladbach	65	56.0	9.2	.1418	.1364
Average	75	55.6	8.6	.1426	.1342
Helpers, female:					
Aachen	7	49.4	2.0	.0959	.0945
M. Gladbach	12	51.3	5.6	.1126	.1095
Average	19	50.6	4.3	.1066	.1042

TABLE 4.—AVERAGE WEEKLY HOURS AND HOURLY EARNINGS IN THE WOOLEN AND WORSTED INDUSTRY IN GERMANY, 1927—Continued

Cloth weaving (wool) (Tuchweberei)

Occupation and locality	Number of employees	Average hours per week		Average earnings per hour	
		Including overtime	Overtime	Including overtime and social allowances	Excluding overtime and social allowances
Weavers, male:					
Aachen	1,873	51.0	3.6	$0.2202	$0.2163
Forst	1,311	49.5	2.9	.1821	.1797
Gera	1,089	47.1	0.0	.2225	.2225
M. Gladbach	2,034	49.3	3.8	.2037	.1954
Average	6,307	49.5	2.9	.2073	.2030
Weavers, female:					
Aachen	511	49.5	2.8	.2025	.1997
Forst	587	49.5	2.8	.1695	.1673
Gera	525	47.2	----	.1923	.1923
M. Gladbach	75	50.7	4.8	.1871	.1821
Average	1,698	48.8	2.0	.1871	.1854
Helpers, male:					
Aachen	212	53.8	6.1	.1597	.1554
Forst	35	47.9	5.3	.1464	.1430
Gera	61	50.8	3.5	.1568	.1540
M. Gladbach	51	53.9	6.9	.1547	.1483
Average	359	52.7	5.7	.1573	.1530
Helpers, female:					
Aachen	59	50.7	4.2	.1064	.1042
Forst	33	51.5	4.0	.1016	.1009
Gera	207	47.8	0.6	.1271	.1269
M. Gladbach	10	46.0	1.5	.1257	.1247
Average	309	48.7	1.7	.1202	.1192

France

The wages of employees in the woolen and worsted industry in France are fixed by mutual agreements between the employers' organizations and the unions. The agreement in force in 1927 in the Roubaix-Tourcoing district provided for the following basic rates, which might be modified to some extent by certain family allowances, bonuses, etc.

TABLE 5.—WAGE RATES PER HOUR IN WOOLEN AND WORSTED GOODS MANUFACTURING IN FRANCE IN 1927

Occupation	Wages per hour		Occupation	Wages per hour	
	Males	Females		Males	Females
Sorters	$0.1556	$0.1300	Spooler tenders	----	$0.0997
Wool washers	.1072	----	Dresser tenders	----	.1084
Picker tenders	.1064	----	Drawers-in	$0.1450	.1450
Card strippers	.1143	----	Weavers	.1316	.1316
Card grinders	.1253	----	Cloth inspectors	.1253	.0993
Gill-box tenders	----	.1064	Menders	----	.1135
Comber tenders	.1091	.0910	Fallers	.1253	----
Drawing frame tenders	.1064	.0883	Washer tenders, cloth	.1111	----
Spinners, mule	.1647	----	Dyer tenders, cloth	.1111	----
Spinners, frame	----	.1084	Truckers	.1158	----
Doffers	.0626	.0642	Laborers, dyer	.1064	----
Twister tenders	----	.1024			

Mule-Spinners' Cancer

By FREDERICK L. HOFFMAN, LL. D., CONSULTING STATISTICIAN, PRUDENTIAL INSURANCE CO.

IT IS only recently that mule-spinners' cancer has been recognized as a separate disease entity, and the causative factors are still a matter of dispute among the different physicians and scientists who have been attempting to solve the connection of this type of malignant growth with the occupation. The majority of the cases among textile workers have occurred in England, particularly among workers in the Lancashire mills, and an attempt has been made, therefore, to ascertain whether there was some particular factor operative in this locality which was the cause of the condition but which was absent among such workers in other countries.

Since the present discussion is concerned with scrotal cancers of an industrial origin, I shall first call attention to the occupational distribution of 33 deaths from cancer of the scrotum which occurred in the United States registration area during 1926, and for which original death certificates were furnished me by the Division of Vital Statistics of the Census Office. By occupations, these deaths from cancer were distributed as follows: Laborers, not specified, 6; textile workers, of whom three were mule spinners, 6; farmers, 4; clerks, 4; and one each of the following occupations: Foreman, truck drivers, porters, tanners, polishers, plumbers, coal miners, barbers, oil pressmen, bakers, and druggists; there was also one retired person and one whose occupation was unknown. The average age at death for the 33 persons under review was 59 years. The foregoing clearly emphasizes that cancer of the scrotum is widely distributed in occupations which apparently have nothing in common. It is obvious, therefore, that different causative factors enter into the problem, which for the time being can not be considered otherwise than with reference to scrotal cancers in textile workers. Regarding these there is now quite a literature, concerning which the essential facts will be reviewed.

Since the discovery of mule-spinners' cancer, a number of important communications have appeared in British medical journals, many of which have pointed out that the disease had not been reported for this country, and that, therefore, the alleged causative factor assumed to be operative in England or in the Lancashire cotton mills could not be the true cause, since otherwise the disease would also have been met with in the United States. Feeling skeptical of this conclusion, I have for several years been in search of data that would establish the facts in the case for this country. The fact that three cases of mule-spinners' cancer have now been reported in this country suggests, therefore, that this disease may be a hazard of the occupation here which has heretofore escaped the attention of the medical attendant. As stated later in this article, however, these are not clear-cut cases, since two of these workers were born in England and one in Canada and therefore the disease may not have been contracted in the United States. It is unfortunately too common that the occupational aspects of a disease are ignored by the physician, although in filling out the death certificate the information is readily at hand. In the case of the three death certificates from cancer of the scrotum

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in mule spinners, there was obvious failure on the part of the physician to recognize the occupational factor, the importance of which has been a matter of medical discussion for the last four or five years.

British Parliamentary Discussions of Scrotal Cancer and Proposed Legislation

IN A parliamentary discussion, "Sir Frank Sanderson asked the Home Secretary if his attention had been called to the report of the departmental committee on the occurrence of epitheliomatous ulceration among mule spinners (mule-spinners' scrotal cancer) which attributed the absence of evidence of a similar incidence among cotton mule spinners in France, Germany, Russia, Poland, and America to the comparatively small number of mule spinners employed abroad; and, in view of the fact that in those countries braces were not worn, but a belt only, he would consider the desirability of making a regulation that all spinners should wear belts instead of braces, and of directing a further exhaustive inquiry into the facts as to whether or not there was at the present time a spray of oil which could reach the spinner, before introducing regulations giving effect to the expensive recommendations involving alterations in the machinery contained in the commission's report. Sir W. Joynson-Hicks replied that the suggestion in the question as to the cause of this disease was not, so far as he was aware, supported by any evidence. The experiments of the committee had proved that the oil thrown off from the spindles could reach the spinner, and no further inquiry on this point was necessary. No question arose, however, at present of requiring any expensive alterations to the existing mules. The committee recommended that the employers' and operatives' associations should endeavor, by experiments, to devise some form of simple and inexpensive guard which could be easily added to any existing mule, and he was looking to the industry to give effect to this recommendation."

Here is a clear-cut illustration of the inadvisability of hasty legislation. The assumption that mule-spinners' cancer did not occur in America was based upon pure guesswork and as shown by the facts was due to the indifference of the attending physicians. The suggestion that a belt be worn instead of braces was based upon the assumption that the causative factor in mule-spinners' cancer was not the oil penetrating the garments, but the garments themselves, causing, because of faulty construction, constant irritation of the male genitalia.

Relative Frequency of Scrotal Cancer

ONE of the most important contributions to the subject is an address on "Mule-spinners' cancer and mineral oils," by Dr. Archibald Leitch, contributed to the British Medical Journal under date of November 22, 1924. This address is too long for convenient quotation, but a few of Doctor Leitch's observations may be given. He points out that not less than 20 per cent of the fatal cases of cancer of the scrotum in England and Wales occur among mule spinners.

In the United States there were only 6 reported cases out of 33, or not quite 20 per cent. It is quite probable, however, that the number in this country would have been found to have been larger

if diligent inquiry had been made into the precise occupation, past and present, of some of those who were reported to have died from scrotal cancer.

Doctor Leitch gives some interesting statistics from earlier reports of the registrar general as follows:

> By courtesy of the registrar general for England and Wales we have had access to unpublished records which disclose the fact that during the two years 1913–1914, 90 men died from scrotal cancer, and of these, 18 (or 20 per cent) were cotton spinners; in the years 1921–1922 the total number was 107, of whom 26 (or 24 per cent) were spinners; and in 1923 there were 15 fatal cases in this industrial class. This gives an average of 11.8 per annum. No other group of occupations, with the exception of chimney sweeps, showed more than three cases. Cancer of the scrotum is not a very common disease; it is much less common in the general population than cancer of the penis, for example. During the first two periods mentioned there were 254 and 284 cases respectively of penile cancer, but not one occurred in cotton spinners.

Other Cancers of Male Generative Organs

THE observation by Doctor Leitch that no cases of penile cancer occurred in mule spinners is confirmed by the facts for this country. I have carefully examined 77 death certificates of cases of penile cancer during the year 1926, and not a single case occurred in a cotton worker, but I have not thought it advisable to consider the two forms of cancer together in the present discussion. As observed by Doctor Leitch:

> Here, then, we have something of practical importance, industrially and medically, that calls for explanation and investigation—a particular form of cancer occurring in a certain industry—and yet, strange to say, no one until within the last two years seemed to have known or to have suspected this association. The credit for this important discovery must be given to Southam and Wilson. If our mortality statistics, which are probably the best in the world, had been arranged so as to show localizations of cancers in relation to occupations, the liability of cotton spinners to develop epithelioma of the scrotum would have been appreciated many years ago.

This observation applies even more to the United States than to England and Wales. Our annual mortality statistics from cancer do not reveal the mortality from cancer of the scrotum separately, while no analysis whatever is made of the occupational distribution of the deaths from any form of cancer.

Doctor Leitch continues his address with the observation that—

> According to the 1921 census, 57,069 persons were engaged in cotton-spinning processes, including piecers and mule, ring, and flyer spinners. As the piecers are almost without exception boys or very young men, and as female labor is employed exclusively in ring and flyer spinning, there remain only the mule spinners to consider. Of these there are at the present time 23,000, all adult males. Thus, taking a yearly average of 11.8 cases, we find that approximately 1 in 2,000 mule spinners die each year from cancer of the scrotum. This is startling enough, but if we assume that the carcinogenic agent implicated produces its effect only after many years of exposure to it, the elderly workers must have a greater liability still.

Assumed Causation of Mule-Spinners' Cancer

THE question was then asked by Doctor Leitch: "What are the factors responsible for this affection?" He goes on to quote Southam and Wilson, who had examined the records of cases of cancer of the scrotum admitted to the Manchester Royal Infirmary for a

period of 20 years, and who, noticing that out of a total of 141 cases 69 were mule spinners, had been led to investigate the conditions under which the spinners worked. The foregoing is amplified by an extended observation, which is here given in full:

> At present there is a lawsuit about the matter, and there is a conflict of opinion on certain points, which will be mentioned later, but the main facts are clear. Each spinner attends to a pair of machines, called mules, a portion of which—the carriage—advances and retires bearing on it the spindles on which the spun cotton is wound. Immediately in front of these rows of revolving spindles is a long horizontal steel bar—the counter faller shaft—2 feet 9 inches from the ground, which travels with the carriage. When the yarn breaks, the spinner leans over this bar and pieces the ends. The frictional parts of the mule are lubricated by a mineral oil. The atmosphere in this department is kept warm and moist for technical reasons and the men perspire freely. The workers are lightly clad in a shirt and linen trousers, or in overalls, which are washed usually once a week. Southam and Wilson stated that the men's garments showed "a well-marked oil zone, 6 to 8 inches in depth, across the body at the level of the upper parts of the thighs and the lower abdomen. This oil penetrates the trousers, and the lower border of the shirt also becomes soaked with it." This soiling, they considered, was due to contact with the counter faller shaft, which was covered with oil thrown onto it from the revolving spindles. On the other hand, it has been stated that, in some mills at any rate, the shaft is free of oil and the workers' clothes even at the end of the week show no such oil zone. I have had an opportunity of seeing a mule-spinning machine in operation, and though I could not detect any oil on the shaft on running my hand over it, yet I could not help noticing a deep oil smear in the left groin of the attendant, of which he himself was unaware. It is possible that in the latest type of machinery the lubricated portion of the spindles is better guarded than in older types. Let us note in passing that the men's arms are exposed to the lubricating oil, but they do not develop epithelioma in that situation. "The continual soiling of the clothes with oil," say Southam and Wilson, "and the knowledge that in other forms of cancer tar and paraffin are recognized as direct etiological agents—a view which has received considerable support from experimental work on animals—suggests that the oil, which has a highly irritant action on the tissues of the skin, may be of considerable importance."

Carcinogenic Properties of Mineral Oils

IN VIEW of the preceding observations, Doctor Leitch raises the question, "What evidence have we that mineral oils have carcinogenic properties?" He makes reference to some previous observations of his own in the British Medical Journal of December 9, 1922, in which he gave the clinical and the experimentally ascertained evidence on the subject, and to which reference has been made by Southam and Wilson. This is too technical and too far afield to be included here. The concluding observations, however, are in part as follows:

> We have thus clear experimental evidence that, with regard to the shale products at any rate, the carcinogenic property is present in the heavier commercial oils. It is highly improbable, however, that the occurrence of mule-spinners' cancer is due to the shale-oil ingredients of lubricating oils alleged to have been used during the war. For one thing, the time is too short for epithelioma to have resulted from their use, and for another, we have the information from the registrar general that cancer of the scrotum was prevalent amongst mule spinners many years before the war.

Doctor Leitch, therefore, was led to investigate the tumor-producing properties of petroleum oils. He limited himself to trying the effects of crude oils, untreated in any way, from wells in various parts of the world. In all 16 different samples were used, the assumption being that the crude oils would probably contain more of the

carcinogenic factors than any of the products refined from them. This assumption, however, he admits was not correct. He makes particular reference to one sample of oil from California, shown to be very potent in producing tumors. A specimen of fuel oil, which was probably a mixture of the higher boiling fractions of several oils, produced epitheliomata after six months; it was, in fact, more active than any of the crude oils.

Following a further discussion of technical detail, which for want of space is omitted, Doctor Leitch concludes that—

> Our experiments show, therefore, that refined mineral oils, such as are used for the lubrication of machinery, are capable of producing skin cancer after long exposure, and they go far to prove the contention of Southam and Wilson that mule-spinners' cancer is the result of several years of contact with lubricating oils.

Bodily Parts Affected with Cancer

THE question was then asked by Doctor Leitch: "Why is the scrotum exclusively affected whilst the thighs and the arms escape?" to which he replied:

> No satisfactory answer can be given at present. To say that the scrotum is more susceptible to the action of the oil is merely to repeat the question. A similar difficulty faces us if we attempt to explain the localization of chimney-sweeps' cancer. There is still another difficulty. Mule spinning is not confined to cotton; similar machines are in use in wool spinning, and so far we have no evidence of any undue liability in wool spinners to scrotal cancer. In the cotton mills the temperature is high and the air is moist, but not so in the woolen mills. It may be that in the former the heat relaxes the tissues of the scrotum and allows the entry of oil into the large opened sebaceous follicles.
>
> Accepting the oil as the cause, what measures can be taken to prevent the occurrence of this far too common industrial cancer? Probably it is impracticable to employ vegetable or animal oils instead of petroleum oils for the lubrication of the spindles, even if we could be sure that they had no carcinogenic property, and an attempt to discover safe mineral oils seems foredoomed to failure. It should not be a difficult matter to fit to the machines an effective guard which will prevent the spindle oil being thrown off. Possibly a short thin apron impregnated with cellulose might prove useful in protecting the clothes from being soiled. But however soon preventive measures are adopted it should be realized that cases of scrotal cancer will still occur, though with diminishing frequency, for several years to come amongst the older workmen owing to the delayed action of the irritant.

Quotation at considerable length has been made from the paper by Doctor Leitch in view of his outstanding importance in the present discussion. As far as I know, no other authority has written in like detail upon the facts to equally practical advantage.

Inquiry of British Departmental Committee

THE subject of mule-spinners' cancer was made a matter of official inquiry by the Home Office of the British Government, which appointed a committee to consider evidence as to the occurrence of epitheliomatous ulceration among mule spinners.[1] Among the members of this committee was Dr. Archibald Leitch, an outstanding authority in cancer research.

[1] Great Britain. Home Office. Report of the departmental committee appointed to consider evidence as to the occurrence of epitheliomatous ulceration among mule spinners. London, 1926.

Definition of Mule-Spinners' Cancer

The report is introduced by a definition of the nature of the disease, which is given as follows:

> The fully developed disease is a cancerous ulceration (epithelioma) affecting the skin of certain regions, especially that of the scrotum, the face and neck, and the arms. The commonest site affected is the scrotum, and particularly its anterior aspect on the left side. Untreated, the condition spreads both locally and through the lymphatics to the glands of the groin and the interior of the body, eventually causing death. Though the earlier stages are not yet well known it is certain that the malignant condition is sometimes preceded by a more or less innocent wart. Complete removal in the early stage is frequently followed by cure.

Comparative Occupational Mortality Rates from Cancer of the Scrotum

The occurrence of the disease is dealt with statistically in quite an adequate manner, including useful tabulations of deaths from cancer of the scrotum in England and Wales in the 10 years 1911-1920, classified by occupations, with mean annual death rates per million living in certain occupations, based upon the populations enumerated in the census of 1911. Unfortunately, for most of the occupations considered, the number of deaths is really too small for an entirely safe generalization, although the population exposed to risk was quite sufficient in a majority of the employments listed. It would seem to serve no purpose to give this list in full, as it is quite extensive, but the following outstanding occupations are listed in the order of their relative importance:

DEATH RATES (PER 1,000,000 LIVING) FROM CANCER OF THE SCROTUM, IN ENGLAND AND WALES, 1911 TO 1920

Occupation	Population, 15 years and over in 1911	Deaths from cancer of the scrotum	Death rate
Patent-fuel manufacture	1,150	7	608.7
Chimney sweeps	7,673	41	534.3
Cotton-spinning processes	74,625	100	134.0
Cotton workers, not specified	11,066	8	72.3
Chemical manufacture	33,121	10	30.2
Textile dyers	26,117	7	26.8
Gas-works service	54,447	11	20.2
All occupations	11,914,569	486	4.1

This table emphasizes the predominating character of scrotal cancer as an industrial affection in industries with an exposure to chemical irritation. It clearly emphasizes the possibilities of chemical irritants as causative factors in producing scrotal cancer, subject, of course, to widely varying conditions in chemical processes. Cotton-spinning processes occupy the third most important position on the list and numerically the first. Perhaps the contrast in occupational conditions is best emphasized by comparing the scrotal cancer incidence in 74,625 cotton spinners with 100 deaths, with coal miners, above ground, numbering 84,279, with only 3 deaths. It is hardly necessary to point out that in the computation of the rates the number of employees is multiplied by 10, the number of years under review.

Age Incidence and Number of Deaths, 1895–1924

The contrast is further emphasized by comparing the age incidence of scrotal cancer among cotton spinners with that of all males up to 75 years of age. Apparently there were no deaths from scrotal cancer among spinners at age 75 and over, although such deaths occurred in the general population.

DEATH RATES (PER 1,000,000 LIVING) OF ALL MALES AND OF COTTON SPINNERS FROM CANCER OF THE SCROTUM, 1911 TO 1920

Age group	All males	Cotton spinners	Per cent death rate for cotton spinners is of that for all males
25–35 years	0.46	6	1371
35–45 years	2	69	3691
45–55 years	6	367	6035
55–65 years	13	1,344	10216
65–75 years	15	1,544	10058
75–85 years	19	----------	----------
85 years and over	17	----------	----------

The report contains a further table giving the chronologic occurrence of mule-spinners' cancer since 1895. This table is as follows:

DEATHS FROM CANCER OF THE SCROTUM AMONG MULE SPINNERS, 1895 TO 1924

Quinquennial periods	Average number of spinners per annum (excluding piecers)	Deaths for each period	Average deaths per annum	Deaths per thousand
1895 to 1899	5,660	3	0.6	0.10
1900 to 1904	5,955	5	1.0	.16
1905 to 1909	7,389	7	1.4	.18
1910 to 1914	8,161	9	1.8	.22
1915 to 1919	7,164	16	3.2	.44
1920 to 1924	8,495	34	6.8	.81

The report points out that the earliest age at which the disease was recognized, based on an analysis of 539 cases, was 22 years and the latest 77 years. Only 1.1 per cent of the cases occurred at ages under 30 years and 4.4 per cent were below 35 years of age. It was, therefore, concluded that the age period at which the disease appears to be especially liable to manifest itself commenced at 35 years and reached its maximum at 55 years, the average age for all cases being 52.4 years.

Effect of Duration of Employment

It is furthermore pointed out that the results of the inquiry show that "the disease does not usually occur until the person affected has been employed in the mule room for a considerable period of time. In only 14, or 2.6 per cent of the 539 cases investigated, was the duration of employment before the disease manifested itself less than 20 years, while the average duration of employment for all cases was

approximately 40 years. The shortest length of time in the case of persons employed only as spinners was 10 years." This conclusion is of profound importance particularly in connection with workmen's compensation cases. A case has just been decided in the British courts in which this principle of employment duration was involved (see p. 44).

Clinical Course of the Disease

Of importance also is the subsequent conclusion that mule spinners' cancer does not in all cases necessarily occur on the scrotum. Of the 539 cases, 450 occurred on the scrotum; 31 on the head and neck; 23 on the upper limb; 11 on the lower limb; 6 on the groin and trunk; and 13 on the male genitalia otherwise, while 5 were multiple affections. The observations on the course of the disease in mule operatives do not permit of useful abbreviation and are therefore given in full:

As the occurrence of this disease has been recognized for only a few years, the premonitory signs and symptoms have not been fully studied. From the evidence supplied to us it appears that wart formation usually precedes, sometimes by many years, the development of the cancer. Indeed, in some cases, changes in the skin are apparent before even a wart develops. In other cases, if we are to judge from what has been observed in some of the shale-oil workers in Scotland, and from observations on animals, the epithelioma may develop without warning signs; but it is only by accumulation of careful observations on mule operatives that the early manifestations can be fully ascertained. The warts that develop may be single or there may be several of them appearing simultaneously or at different times. One or more of these may become malignant, so that the removal of a wart does not necessarily prevent the subsequent development of another or a second primary epithelioma; indeed, we have had reports before us of such occurrences. Once it has started on its career as an epithelioma the progress of the growth is much more rapid, and as the months pass the prospect of an effective cure is diminished. Our medical witnesses agree that hope of successful treatment, even with the most radical surgical measures, is considerably reduced after the epithelioma has been in existence six months, but if the wart is removed before it reaches such an advanced stage, there is every chance of a permanent cure. The epithelioma ulcerates and spreads, discharging a sanious fluid and causing considerable pain. When it is situated on the scrotum it spreads to the glands of the groin and from them to internal structures. In other situations, as for example, on the arm, it would appear as if the progress of the disease was relatively slow and much more amenable to surgical treatment.

Observations on Causative Factors

Much more extended are the observations on causation. They include historical observations of men engaged in oil refineries dating back to 1875. They are amplified by reference to experimental evidence produced in 1921 by Doctor Leitch, who experimented on mice with various mineral oils of the shale group. They are summarized in the statement following:

We have thus conclusive evidence that certain mineral oils, including such refined mixtures as lubricating oil, are capable of inducing epitheliomatous formation when the subject has long been exposed to their action. Whether these oils are the direct immediate producers of the cancerous growth, or merely the principal factors that prepare the soil for some other and more general cancer-producing agent, is a scientific matter, which we are not called upon to settle. The broad fact is beyond reasonable dispute, namely, that in the absence of exposure to such mineral oils there would be no mule-spinners' cancer. It does not follow that all mineral oils necessarily have this effect; some, indeed, may be found on investigation to be innocuous; but until any particular oil is shown to be free from cancer-producing property, it must be regarded as dangerous. In this connection it should be mentioned that our attention has been called to a

certain oil which was claimed to be harmless. It was said to have been prepared after careful chemical analysis, and there is no doubt that the producers felt satisfied that the dangerous elements had been eliminated; but we feel it necessary to point out that their opinion was based on a purely chemical test, and that the oil has not been subjected to any physiological test. We think that in the absence of such physiological proof the oil can not be regarded as free from danger.

Descriptive Account of Occupation

In addition to the foregoing, there are extended observations on the history of spindle oil, followed by a descriptive account of the spinners' mule and of conditions in mule rooms facilitating access of oil to the spinner and his clothing. They include the conclusion that there is evidence that fine particles of oil are to be found continually in suspension in the air of the room. Other factors which have been suggested as contributory causes of the disease are mechanical friction against the faller bar; the temperature and the moisture of the atmosphere in the mills; personal cleanliness; the use of colored overalls; and the presence of metallic or carbon particles in the oils. In conclusion, it is stated that—

> However much these factors may contribute, none of them has been shown to have any direct bearing on the causation of the disease. On the analogy of mule spinners' cancer with other forms of occupational cancer (tar workers, patent-fuel manufacturers, paraffin workers, chimney sweeps, etc.), by the evidence of the occurrence of cancer in petroleum refiners, from the results of deliberate experiments with mineral oils, by our knowledge of the conditions under which mule operatives are exposed to the action of such oils, and by the general consensus of opinion expressed by the medical witnesses who appeared before us, we feel bound to come to the conclusion that the evidence is strongly in favor of this disease being due to the prolonged action of mineral oils.

Suggested Remedies

The committee then considered suggested remedies, including (1) provision of innocuous oils; (2) prevention of contamination by oil; (3) protective clothing; (4) cleanliness; and (5) medical examinations. The summary of its recommendations is as follows:

(1) Institution of experimental research into oils with a view to finding oils which are innocuous and at the same time suitable as lubricants.

(2) Development of a nonsplash type of spindle bearing, more particularly for new mules.

(3) Prevention of oil splash from the spindles of existing mules by means of some form of guard, the type to be decided by a series of tests to be mutually agreed upon and arranged by the Masters' Federation and the Operative Spinners.

(4) Periodic medical examination of the workers:

(*a*) To be tried at first on a voluntary basis, but, if unsuccessful in one year or at any subsequent period, to be made compulsory.

(*b*) To be performed at the factory.

(*c*) To take place at least every four months.

(*d*) To include every worker in the mule-spinning room who is 30 years of age and over.

(*e*) To be performed by three or four medical men appointed by the trade, with Home Office approval, for the whole area, or failing this by special medical men appointed for suitable areas by the Home Office in conjunction with trade representatives, all workers in any given area to be examined by one man.

(5) Education by periodic distribution of leaflets in order to direct attention to the importance of cleanliness and to the danger of delay in securing early treatment.

Geographical Distribution of Cases

The report of the committee is briefly reviewed in the British Medical Journal of April 24, 1926, being introduced with the statement that mule-spinners' cancer was brought into prominence in a paper by A. H. Southam and S. R. Wilson, published in the British Medical Journal of November 18, 1922. In this paper attention was drawn to the prevalence of epithelioma of the scrotum among spinners in South Lancashire, and the suggestion was put forward that the disease was due to soiling of the clothes by the lubricating oil used on the spinning machinery. The article was illustrated by photographs showing the characteristic attitude adopted by the spinner when at work, to explain the incidence of the disease on the scrotum. According to the British Medical Journal, the report pointed out that in the original report by Southam and Wilson, some 69 original cases of cancer of the scrotum had been recorded as attending the Manchester Royal Infirmary, while the committee itself had been able to trace, up to 1926, 539 cases. But it is observed that many other cases must have escaped notice. The 539 cases date back to 1876 and are reproduced in the table following:

CASES OF MULE SPINNERS' CANCER IN ENGLAND AND WALES FROM 1876 ONWARD, BY DISTRICTS

District	Number of spinners employed in 1925	Spinners		Ex-spinners in other occupations		
		Scrotum	Other parts of the skin	Scrotum	Other parts of the skin	Total
Oldham	8,131	160	39	26	4	229
Bolton	3,900	57	12	11		80
Ashton-under-Lyne	2,740	25	8	11	2	46
Rochdale	1,702	22	3	3	1	29
Wigan	1,276	8	6	1		15
Preston	1,139	19	1	4		24
Blackburn	974	44	3	4	2	53
Stockport	788	7	1	4		12
Halifax	698	5	2	1		8
Manchester	548	11	2	2	1	16
Burnley	427	18	2	2		22
Huddersfield	320	4				4
Keighley	56	1				1
Total	22,699	381	79	69	10	539

With reference to the preceding table, it is said that inquiries abroad as to evidence of a similar incidence among mule spinners in France, Germany, Russia, Poland, and America has "led to entirely negative results."

It is also pointed out that—

> The report shows that with the exception of patent-fuel workers and chimney sweeps, the mean annual death rate for persons employed in cotton-spinning processes is very much higher than that for any other class of workers.

Age Period of Greatest Mortality

Tables are included showing that among cotton spinners the mortality is fourteen times as great at the ages of 25 to 35 as that in the general population, between the ages of 45 to 55 it is sixty times as great, and between 55 and 75 it is one hundred times as great. Further-

more, evidence goes to show that the incidence of the condition has been rapidly increasing. Returns prove that the number of deaths from it has increased at a rate out of all proportion to the increase of spinners employed. The earliest age at which the condition was recognized was 22 years and the latest 77 years. The age period at which it appears to be specially liable to manifest itself commences at 35 years and reaches its maximum at about 55, the average age for all cases being 52.4 years.

In the series of cases for the United States, the ages of mule spinners dying from scrotal cancer were 47, 52, and 78 years. The ages of the other three textile workers were 56, 67, and 77 years. One of these was a carpet weaver, who may possibly have been previously employed as a mule spinner.

Site of the Disease

Of interest in this connection is the statement that—

While the majority of the cases occur on the scrotum, the growths may be found on other parts of the body. In 539 cases the disease was on the scrotum in 450 (83.5 per cent) and on other parts of the skin in 89 (16.5 per cent). The following table shows the different parts of the body on which the growths were found:

SITE OF THE DISEASE

Site	Spinners	Ex-spinners in other occupations	Total
Scrotum	381	69	450
Head and neck	29	2	31
Upper limb	22	1	23
Lower limb	10	1	11
Groin and trunk	5	1	6
Penis	10	3	13
Multiple:			
Leg and arm	1		1
Forearm and ear		1	1
Ear and scrotum		1	1
Penis and scrotum	2		2
Total	460	79	539

In continuation, it is said that—

It appears that wart formation usually precedes, sometimes by many years, the development of the cancer. The warts may be single or several may develop at one time. Once it has started as an epithelioma the progress of the growth is rapid, and as the months pass the prospect of effective cure is diminished. Medical evidence is to the effect that if the wart is removed early there is a good chance of a permanent cure. The scrotal growth soon spreads to the glands, but in other situations the progress of the disease appears to be relatively slow and more amenable to treatment.

In dealing with the cause of the disease, the report recalls that Southam and Wilson put forward the suggestion that in these operations the substance responsible for causing the disease was the mineral oil used in lubricating the spindles. They based their view on the knowledge that in other forms of cancer tar and paraffin were recognized as direct causal agents and were shown by animal experiments to have such a property. The proof that certain mineral oils are capable of inducing cancer of the skin is twofold, being founded on observations on men and experiments on animals. Scott has provided evidence of the occurrence of epithelioma amongst the employees in the Scottish shale industry, whilst experimental evidence has been furnished by Leitch with his experiments on mice.

Suggestions for Prevention

In commenting editorially upon the foregoing report, the British Medical Journal first directs attention to its observations on the original communications published in 1922 when it said that "There seems to be no reason why this form of cancer should not be entirely prevented, and probably a commission or committee composed of representatives of employers and workmen, together with technical experts and cancer investigators, would soon find effective means." Such a commission of inquiry would certainly seem called for, for this country in certain cotton-spinning States in which the industry is of large proportions. The editorial concludes as follows:

The committee, after considering carefully and extensively all the possible factors in the causation of the disease, states that "on the analogy of mule spinners' cancer with other forms of occupational cancer (tar workers, patent-fuel manufacturers, paraffin workers, chimney sweeps, etc.), by the evidence of the occurrence of cancer in petroleum refiners, from the results of deliberate experiments with mineral oils, by our knowledge of the conditions under which mule operatives are exposed to the action of such oils, and by the general consensus of opinion expressed by the medical witnesses who appeared before us, we feel bound to come to the conclusion that the evidence is strongly in favor of this disease being due to the prolonged action of mineral oils." The slight hesitation noticeable in the last phrase is doubtless due to two circumstances for which no thoroughly satisfactory explanation is forthcoming: (*a*) Mule spinners' cancer is not known in other countries, and (*b*) though the spinners work with bare feet , which are more thoroughly saturated with oil, yet epithelioma of the feet has been found to be excessively rare. It may be said that the scrotum, as far as one can gather, is a site but rarely affected with cancer in the experience of foreign observers, and then only in association with mineral oils; and further, that mortality statistics and the medical inspection of workers are not so highly developed abroad as in this country. It is a strange fact that chimney sweeps' cancer also is practically confined to the British Isles. With regard to predilection for the scrotum rather than for other parts of the skin which may be more exposed, one can only put it that the scrotal skin, for some unknown reason, is more sensitive to the action of such carcinogenic substances. That mineral oil is capable of producing epithelioma on favorable sites is beyond reasonable dispute. That being so, it will be no matter of surprise that the committee is of opinion that other industries entailing an exposure to mineral oils may show a similar liability to skin cancer, and instances of this are coming to light. Indeed, if it had not been for the large numbers of men employed in such a well-defined trade as cotton spinning the incidence of the disease might wholly have escaped notice.

The obvious way, therefore, to prevent this form of cancer is to find an innocuous lubricating oil, and this is the chief recommendation of the committee. Doctor Leitch has shown that several mineral oils at least have a carcinogenic property. Whether some mineral oils are devoid of this power is a matter for experiment, though possibly an investigation into the biological effects of animal or vegetable oils, as we understand is being done, might prove more useful. At any rate, the problem of finding such a safe oil must be solved by the oil technologists in conjunction with the pathologists. Meanwhile, the committee suggests certain modifications of the present mule machinery in order to prevent the lubricating oil from being sprayed from the revolving spindles onto the clothing of the workers, insists on the value of cleanliness, and advocates the issue of warning leaflets to all engaged in the industry. Frequent medical inspection is of the utmost importance in order that the preliminary manifestations of lesions may be detected (local skin hyperplasias and warts) and remedial measures undertaken long before the condition becomes frank epithelioma. A trial of voluntary medical examination is to be made, but if this does not succeed then a compulsory system of medical inspection is recommended.

Conflicting Views on Causation

IT WAS only natural that since the disease was discovered in South Lancashire the local medical officers of health should have given special attention to the subject. An outstanding report made by Dr. James Robertson, medical officer of health for Darwen, was reported in full in the London Lancet of December 10, 1927. After referring to the report of the parliamentary committee he quotes certain controversial arguments, as follows:

> First argument: That of Mr. A. H. Southam and the late Dr. S. R. Wilson, of Manchester, namely, (*a*) that as the spindles are oiled by mineral oils this oil is continuously sprayed onto the spinner's overalls in the region of the scrotum; (*b*) that as the spinner pieces his broken ends he must lean over the faller shaft; by so doing his scrotum comes into contact with this shaft, thereby causing friction. The oil, plus friction, is the cause of the epithelioma.
>
> Second argument: Dr. A. Leitch produced epithelioma upon mice by rubbing mineral oil into their backs.
>
> From these two arguments it is concluded that oil is the cause of this disease. While I agree that mineral oil plus friction can be a cause of epithelioma, I feel satisfied that I have definitely proved that neither the faller shaft, the spindles, bolster, or any part of the mule take part as a factor in the causation of this disease. As regards the oiling of the spindles, the committee's report and my observations agree as to the facts, but differ as to the conclusions to be drawn from them.

Doctor Robertson further quotes from the report as regards exposure to mineral oil, as follows:

> We have been struck by the different amounts of oil used in different mills on the same type of mule. This apparently varies from a minimum of one-quarter pint to a maximum of slightly over 1 pint per mule per day. We would suggest that in the interests of economy and of cleanliness attention should be paid to lubrication. Our experiments show that owing to centrifugal action a large proportion of this oil is sprayed off during the first few minutes after starting the machinery, but that occasional drops are still being thrown off after two or even three hours. The oil is thrown from that portion of the bare spindle immediately above the bearing and normally oil does not appear to creep more than about one-sixteenth or one-eighth inch up the spindle.

He then refers to detailed experiments of his own and repeated tests which definitely established that all oil which was sprayed off comes off within the first three seconds, and that the spinner can not possibly be in a position to get any of this spray upon his overalls. Apparently, no actual tests were made by the committee, as it was content to say "the first few minutes." The quantity of oil thrown off in three seconds has been found by Doctor Robertson's experiments to be actually more than the committee in its report states is thrown off, namely, one-tenth of a pint per day per mule, instead of the committee's finding of one-thirteenth of a pint. He furthermore quotes from the report to the effect that—

> "A quarter to 1 pint of oil per mule per day is used in the oiling and there are two oilings." There are 9,600 minim drops in 1 pint. On the committee's smallest computation, therefore, of one-quarter pint of oil per mule per day there would only be 2,400 minim drops per mule per day or 1,200 at each oiling, and as there are 1,320 spindles per mule, this means that each spindle would get less than a drop per oiling; and if one takes it at one-half pint per mule per day it would still be less than two drops per oiling, and as the spindles are revolving at 11,000 revolutions per minute, it is difficult to take seriously the suggestion that these two drops or any part could be sprayed off for hours.

It must be remembered also that when the oil is being sprayed off that portion which is being sprayed toward the worker is only a quarter of the whole spray circle. An equal amount will be sprayed off, of course, within the first three seconds towards the creel and to the right and left. I therefore contend that no oil can reach the spinner from the bolster or any part of the mule. My photographs further show very definitely that under no working conditions does the man's scrotum touch the faller shaft.

It may be stated that the whole theory of the faller shaft coming into contact with the spinner during the process of piecing breaks down in association with the spinners themselves. It is learned from them that when piecing is taking place, to touch the faller shaft involves a loss of balance, and this happens to none except beginners. Just as the writer of the committee's report uses the phrase "first few minutes," in regard to the oil spray, so he states that the height of the bolster above the floor level is 2 feet 6 inches, whereas the exact height is 2 feet 3½ inches. This is material to our discussion, as if oil did spray from the bolster at a height of 2 feet 6 inches it would be at the scrotal level but at 2 feet 3½ inches it is below the scrotal level. It is sufficient to say that all spinning mules are standardized.

As I have shown, the spinning mule can take no part as a factor in this disease; recommendations 2 and 3 given in the report will add expense and serve no purpose. These recommendations are: "(2) development of a nonsplash type of spindle bearing, more particularly for new mules; (3) prevention of oil splash from the spindles of existing mules by means of some form of guard, the type to be decided by a series of tests to be mutually agreed upon and arranged by the Masters' Federation and the Operative Spinners."

It is evident that Doctor Robertson did not accept the findings of the committee, which, however, otherwise had met with general acceptance on the part of those engaged in cancer research or of those who were familiar with the subject. He points out in his discussion that he had demonstrated that oil is not thrown on to the spinners from the spindles, but that oil was found upon the overalls of the spinners, namely, at the knees and down the flanks or thighs. Without enlarging unduly upon this phase of the controversy, his conclusion is here quoted:

Reviewing all these facts, it can not, in my opinion, be contended that because Doctor Leitch produced epithelioma under laboratory conditions upon mice with oil that similar laboratory conditions obtain in the mill under ordinary working conditions. Further, if this oil was cancerogenous, as the men work in bare feet, which are permanently oily, and under friction afterwards in their oily socks, there would be cases of epithelioma of the feet. Further, there are mills in Lancashire where women have always been employed as spinners, and no case of vulvar epithelioma is recorded. Neither does the oil theory explain the fact that 84 per cent of these epitheliomas occupy an exactly similar site, the remaining 16 per cent occurring upon a second specific site, as stated and explained in my thesis.

The observations by Doctor Robertson naturally attracted widespread attention. He was of the opinion, based upon an extended study, that—

The cause of spinners' scrotal cancer is due to the friction of the fork of the hard blue or white overall acting upon the scrotum each time the spinner leans over the faller shaft to piece, the fork being pulled up by the stretching movements of the body required by the piecing operation acting upon an inelastic brace. The aniline dye which stains the legs and scrotum, and the dirt on the latter, are aggravating factors. I suggest that the hard rough open seam at the overall fork produced irritation 200 to 240 times an hour 5½ days per week upon the scrotum at the specific sites of this disease, according to the spinners' reach in piecing his broken end. There are certain facts in the committee's report which support my contention.

He next refers to the table previously given showing the geographical distribution of scrotal cancer cases in Lancashire. He points out that the table shows a heavier rate in the Blackburn

and Burnley areas than in the others. He observes that it was in these two areas only that the weariug of blue overalls commenced in 1905. Other areas did not adopt blue until 1917, but from about 1905 wore white overalls made of the same material in all respects except color. The question arises as to whether the aniline dye in the blue overalls added to the friction of the overall fork accounts in some measure for the increased incidence in these two areas. He stresses the fact that the fustian overall was discarded in 1905 by some 90 per cent of spinners, the present-day rough cotton material being used since that date. The very few cases of scrotal epithelioma during the years prior to 1905, and for some years afterwards, did not exceed the average rate for the general population. As to this statement, however, no evidence has been forthcoming.

Alleged Nonoccurrence in America

DR. Robertson next repeats the statement that mule-spinners' cancer has not been observed in America and in certain other foreign countries. The explanation which he suggests for the absence of the disease here and elsewhere is, what he claims to be a fact, that in those countries braces are not worn, but a belt only. That also is largely, of course, a matter of conjecture, for as far as I know the subject has not been exhaustively studied, certainly not in this country. With particular reference to American experience, he quotes as follows from the Journal of Industrial Hygiene of June, 1927, by Dr. Derric C. Parmenter, that—

> So far as I have been able to discover, cancer of the scrotum is relatively rare in the United States. Cases have been reported among men working with tar and with the paraffin oils, but these cases are few and not well defined. There seems to be very few recorded cases of cancer which are directly traceable to the cotton trades, such as spinners' scrotal cancer. This may be due to: (1) lack of observation heretofore; (2) the tendency of mill hands in the South to wear trousers with belts rather than shoulder-strap overalls; (3) the general tendency of mill hands in the North, the majority of whom wear overalls, to wear also some sort of underclothing.

Doctor Parmenter therefore concludes that—

> Any of these factors would undoubtedly tend to reduce the occurrence of anything like the spinners' cancer as dicussed in Dr. Robertson's article. In Massachusetts at the present time an intensive study of cancer is being conducted by the State authorities, with special reference to its aetiology. This investigation should call attention to any types of cancer which may be of industrial origin.

As a matter of fact, the Massachusetts Cancer Commission did not consider the industrial aspects of the cancer situation. The observations regarding the clothing worn, North or South, apparently with reference to belt or brace, are merely a matter of conjecture. Doctor Parmenter, however, is entirely correct when he observes that the lack of information concerning mule-spinners' cancer in this country is probably the chief explanation.

Medical Observations

THE concluding section of Dr. Parmenter's report refers to the possible association of scrotal cancer in mule spinners with ichthyosis, which is defined as a rough skin due to hypertrophy of the horny layer of the epidermis with diminished sweat and sebaceous secretion.

He raises the question "What is the relative frequency of ichthyosis?" and observes:

It is apparently fairly common in Lancashire, but its incidence may vary in different parts of the country. In an examination of 400 operatives I have found a 5 per cent incidence. Through the kindness of Doctor Robertson, I have recently been afforded the opportunity of inspecting 400 mule spinners at work. Their ages ranged from 15 years to 65 years and the duration of their occupation from two days to 50 years. I found 20 affected with ichthyosis. In 10 the affection was slight and in the other 10 the condition was well marked. Of these, two had suffered from scrotal cancer. Three presented keratotic lesions on the face and temporal regions. I saw no such lesions in the nonichthyotic; hyperkeratosis of the palm was seen only in the ichthyotics. I could find no evidence of any dermatosis of an occupational character, unless it be two cases of mild folliculitis of the arms in two youths who were also affected with ichthyosis.

As a result of this investigation I believe that ichthyosis is an important aetiological factor in mule-spinners' cancer. Though I do not deny that scrotal cancer does arise apart from ichthyosis, I am convinced that the great majority of such patients will give evidence of an ichthyotic skin.

It is not my purpose to discuss the cause of scrotal cancer, but I would express my regret that the departmental committee as a result of its inquiry in 1925 should have found that "in the absence of exposure to mineral oils there would be no mule-spinners' cancer." I can not help thinking that this conclusion was premature. Doctor Robertson, in a careful inquiry into this subject, comes to a very different conclusion.

Without enlarging upon the foregoing, which is rather technical, Dr. Robertson's summary of observations is here quoted:

The experience gained in visiting a large number of mills makes me entirely agree with the committee that much can be attained by regular medical inspection and advice. I am further of opinion that such inspection would rapidly secure personal hygiene amongst spinners, and this in itself would tend to lessen the incidence of this serious disease.

I also strongly recommend that braces should be discarded, and that belts be worn, and further, that the spinner should wash his thighs and scrotum with soap and water every night. By these means I am confident that this disease would be conquered.

The observations of Doctor Robertson were replied to by Dr. R. Prosser White, one of the foremost authorities on skin cancers, in a letter to the Lancet of December 24, 1927, which is here given in full:

If we accept Doctor Robertson's views on the origin of scrotal cancer in mule spinners it means that a nonspecific irritation such as a blow or friction ("mere traumata" as Cheatle put it in a recent issue), does and can, per se, cause cancer. The modern trend of opinion is in the opposite direction. The keratogenic agents, such as certain petroleums, coal products, arsenic, actinic, X, and radium rays have been found to be, statistically and clinically, closely associated with the appearance of malignant growths.

Every substance which irritates the skin has some special property, to which it owes its injurious activity. This physico-chemical quality may be hygroscopic, hydrolytic, protein-precipitant, oxidizing, reducing, keratogenic, dependent on solubility or volatility, and so on. Without one or more of these characteristics both outside and inside the body, the agent is inert. It can not produce a dermatitis, much less a cancer. The purely physical injuries by themselves have not been shown conclusively to be keratogenic or neoplastic, as I have suggested elsewhere. Even though we accept the dictum of Murray, "that it is clear that cancer is not the direct response of the tissues to some special substance," the weight of clinical and experimental evidence is strongly in favor of some petroleum oils being important factors.

We may accept Doctor Robertson's view that the constant friction of the overalls against the left aspect of the spinner's scrotum will denude the protecting corneous layer from that part. The tissues will then be in a ready state to be acted upon by the perpetual rubbing in of any keratogenic material. The amount may be small—or even very small, as Doctor Robertson contends—but no mule spinner in my experience admits that the scrotum is quite free from lubricating oil.

The Oil Question and Other Controversial Questions

THE conclusions and recommendations of the British departmental committee have not been universally accepted. The investigations of Dr. James Robertson, of Darwen, are in marked contrast to the findings presented. Controversial evidence upon the question involved has been recently set forth in several letters in the London Times, the first of which appeared on November 3, 1927, written by Doctor Leitch. This letter restates most of the findings of the committee, concluding in part as follows:

> Finally, in an endeavor to exculpate the lubricating oils, one of the medical witnesses before the committee attributes mule spinners' cancer to the uncleanly habits of the workmen and to the local friction caused by blue trousers, and his view has obtained a certain amount of support. If we remember that cancer of the scrotum is 100 times as common in spinners between the ages of 55 and 75 as it is in the general population, and that while we have records of scrotal cancer in mule spinners for over 30 years, the wearing of blue trousers has only recently become fashionable, we can discount the importance of that supposed factor. The trouser theory is further invalidated by the fact, elicited by the committee, that in 25 per cent of the cases the mule spinners' cancer occurs not on the scrotum, but on other parts of the skin, principally the arms, which are not subjected to the friction of trousers, blue or otherwise, but are subjected to the action of the oil.
>
> From our general knowledge of industrial cancers we can predict that if perfectly preventive measures were adopted to-morrow mule spinners' cancer would not be abolished for several years to come; its incidence would only gradually decrease, for the essential damage, wnich will later declare itself as cancer in susceptible subjects, has already been done in the older generation. Thus doubt would grow stronger. The chief preventive measures suggested are some alteration to the present mules to confine the lubricating oil to its proper place—which may be a costly business—or to use lubricating oils that are devoid of the cancer-producing property. The latter will require prolonged investigation and experimentation. At present all the mineral oils are under suspicion and lubrication experts may have to discover suitable mixtures of animal or vegetable oils. Fortunately, mule spinners' cancer, as a rule, gives premonitory signals long before its arrival, and with frequent medical examinations there is no reason, provided the workers cooperate, why it should ever be allowed to make its appearance.

The letter of Doctor Leitch was replied to by Dr. E. M. Brockbank under date of November 23, 1927. Doctor Brockbank observes that—

> There is very definite evidence that mineral oil plays some part in its causation, and I accept this view. But this is not the sole cause. The disease is practically confined to Lancashire cotton operatives working on Egyptian and American cotton. They work in hot rooms and wear the minimum of clothes, and piece broken ends with one hand. It does not occur in men working on standard size mules, spinning waste cotton or worsted, lubricated with mineral oil. They work in a cooler atmosphere than that of other mule rooms, and wear more clothes than ordinary spinners do. They piece with two hands. It occurs also occasionally in men in cotton mills who do not work on mules, but it does not occur in similar operatives in worsted mills. No cases occurred in the last four years in the oilers, greasers, mechanics, or engineers in the many mills of the Federation of Master Cotton Spinners, yet the clothes of these workers are more saturated with oil than are those of the mule spinners. They wear more undergarments than mule spinners do, and are not subject to the same irritation from their overalls, referred to below, as spinners are.
>
> An important fact bearing on the causation of the disease is that cancer does not occur in mule spinners on an adjoining part of the skin which is more subject to contact with oil than the scrotum can be, and yet cancer in this site occurred three times as often in 1910, 1911, and 1912 in the general male population as scrotal cancer did. Scrotal cancer has appeared in men after leaving the mill, but it is very doubtful if such cases can be attributed to causes acting during

the spinning occupation, because many elderly people working at any trade suffer from a form of thickened skin which naturally tends to become cancerous.

Doctor Brockbank next considers the observations of Doctor Robertson, of Darwen, who, he remarks—

Has pointed out that the important cause of mule-spinners' cancer is probably persistent friction from the fork of the combination overalls worn by the operatives acting on a delicate portion of skin which is kept moist by natural, and perhaps unnatural, secretions (not washed off daily as they should be), and which also has rubbed into it from time to time in the course of years chemicals used in finishing the material of modern cotton-workers' overalls. When a cotton spinner has to piece a thread of ordinary yarn he leans over and not against the mule, balancing on the left leg to get at the broken thread, which he pieces with his left hand only, not with two hands. This movement, with the rigid brace on men, is very liable to pull the ridge where the two legs of the trousers join against the very part of the body where the cancer arises, and the piecer may do this as many as 100 times every hour of work according to the coarseness of the count being spun on the mules. The soft vest worn by the men in hot mill rooms does not reach far enough down in all, if in any, of the workers to intervene between the overalls and the skin. Such persistent friction, acting over many years on a tender piece of skin, is very likely, without any help from mineral oil, to cause irritation of the skin, which is often the forerunner of cancer. A belt round the waist diminishes or prevents such friction on the one spot, and it is a striking fact that belts, not braces, are worn by the mule workers of the Finer Cotton Spinners Association in France, where the mule-spinners' cancer does not occur. No cases occur in the native spinners in hot climates who wear loin cloths.

Recent Law Case

THESE and many other observations are suggestive of the urgency of a much more extended investigation. In the Lancet of February 11, 1928, appear several suggestive statements, emphasizing the great practical importance of the duration of employment in scrotal cancer cases, as shown by the case in question as follows:

Judge Spencer Hogg, at Oldham County Court, on January 26, had before him an important case in which the question of the legal power given to medical referees under the workmen's compensation act was raised. An application was made by Jane Alice Needham for compensation from the A. C. E. Mill Co., Hollinwood, on account of the death of her husband as the result of spinners' cancer. The husband, who was 65 years of age, had been a cotton spinner for 40 years, but had only been in the employ of the A. C. E. Mill from June, 1925. The respondents contended that he was employed only as an odd man, who did not come into contact with mineral oil. After a certificate had been issued by Dr. H. M. Fort, a certifying surgeon, the case was taken to Dr. Judson Bury, medical referee for industrial diseases, who dismissed the mill's appeal and certified that the man was suffering from the disease. It was stated that the man had an ulceration of the neck, and the respondents claimed that this was not due to his employment, and that the onus was on the applicant to prove that it was. The judge said that the decision of a medical referee took the matter out of his hands. If there was an ambiguity in the certificate he would have had jurisdiction; but there was not. The solicitor for the mill remarked that it left the employers in a position of having to pay compensation without the case being heard as to whether or not the disease was the result of the man's employment by the firm. The judge agreed that it really took the jurisdiction out of the hands of those who hitherto dealt with it. He granted the application for £250 compensation, but he granted a stay of execution on the usual terms.

Nativity of Mule-Spinners' Cancer Cases in the United States

ONLY by accident was my own attention drawn to the necessity of considering this phase of the question in the American cases of mule-spinners' cancer, to which I have referred. Dr. S. A. Henry, of Manchester, England, was good enough to raise the question

as to the nativity of the persons who had died from scrotal cancer in the cotton trade in this country. I accordingly went over the certificates and found the following extremely interesting information:

NATIVITY IN SIX CASES OF DEATH FROM SCROTAL CANCER IN COTTON-TEXTILE WORKERS IN THE UNITED STATES, 1926

Occupation and sex	Age at death	Birthplace
Mule spinner, male	47	Canada.
Do	52	England.
Do	78	Do.
Textile worker, male	56	Do.
Do	67	Canada.
Carpet weaver, male	77	England.

Here, then, is evidence that four of the cases had their origin in England and two in Canada, with possible English antecedents, while none was a native-born American. Thus the disease was probably not contracted in this country at all, and therefore not attributable to American oil. Evidently, therefore, the matter is one well worthy of further and more extended study. A letter addressed to the boards of health of Lowell, Fall River, and New Bedford produced no further evidence on the subject. If, however, an analysis could be made of the certificates of death from cancer of the scrotum on file with the department of vital statistics of the State of Massachusetts for a period of say 20 years, some very interesting information might be forthcoming.

The Manchester Committee on Cancer has just issued a report stating that "research work is at present being directed entirely to investigations of the cause of the special form of cancer of the skin, epithelioma, which affects mule spinners in Lancashire cotton mills 30 times as often as it affects the general male population." The committee is desirous of ascertaining the precise constituents of the mineral oils used for lubrication in the cotton mills, alleged to be the cause of mule-spinners' cancer. The evidence which will be forthcoming is anticipated with profound interest.

INDUSTRIAL RELATIONS AND LABOR CONDITIONS

Second Report of New York State Industrial Survey Commission

THE New York Legislature, at its session in 1926, provided, by resolution, for the appointment of a committee known as the "Industrial Survey Commission." It consisted of three members of the Senate, five members of the assembly, one person to represent workers, one person to represent employers, and one representative of the general public. There were also five ex-officio members, officers of the legislature. A former industrial commissioner was selected as the executive secretary. The purpose in providing for the committee was as follows:

> To investigate as speedily as possible the existing conditions under which the manufacturing and mercantile business of the State is carried on, including in such investigation all economic factors that enter into the subject, all matters affecting the health, safety, and welfare of the working people and their hours and conditions of labor, the character of employment and its extent or limitation, the competition of other States and foreign countries and its effect on conditions in this State and the effect of the result of these factors upon manufacturing and mercantile business in relation to the best interests of the public, to the end, among other things, that such remedial legislation, to the extent necessary, may be enacted as will advance the prosperity, health, and safety of the working people, the prosperity and safety of the industry and the prosperity of the people of the State of New York as a whole.

The report of the commission was submitted on February 15, 1927 (see Labor Review, May, 1927, pp. 49–52), after which the commission was re-created and continued by a resolution passed by the 1927 session of the legislature, which resolution directed that the commission report not later than February 15, 1928. This time was extended by the 1928 legislature to March 12, 1928.

The second report of the commission [1] stated that as a result of its recommendations to the 1927 session of the legislature and the bills introduced by its direction several acts were passed and received executive approval and are now the law of the State. These laws include the act providing for a 48-hour working week for women, the act saving from unconstitutionality the law on the prevailing rate of wage on public works, the act increasing the maximum total payments under the workmen's compensation law, and other acts in connection with the workmen's compensation law.

[1] New York. Industrial Survey Commission. Report to the legislature transmitted Mar. 9, 1928. Albany, 1928.

The report of the commission submitted on March 9, 1928, contained discussions and recommendations partly summarized below:

Building Industry

A CONSIDERABLE part of the commission's time during 1927 was given to conditions in the building industry. It said that "if conditions have been found more fair both to the individual worker and to the employer, and more reasonable in their effect on the public, it has been due partly to a lessened building activity, partly to a greater number of available workers. It has perhaps been due in some part also to the activities of the commission during the year 1926." The commission also said that it had at this time no concrete recommendations to make to the legislature; but that "the following propositions are fundamental: There exists an undoubted right on the part of either an individual worker or an individual employer to join an association of other workers or other employers; and as a corollary there exists also an equal right to refrain from joining such an organization without penalty to him of any nature."

Hours of Labor for Women

FOLLOWING the commission's report of 1927 the legislature enacted a modified 48-hour a week law for woman workers in factories and mercantile establishments. The commission has since been asked by many wage earners to recommend a modification of the law. The commission, however, is of the opinion that the law "should be given a longer trial as to the ability of industrial management to meet successfully its problems and for woman workers unfavorably affected by it to adjust their problems to the new conditions created. It is not improbable that with the further experience under the law the present dissatisfaction may entirely or almost entirely disappear before the legislature meets another year."

Injunctions in Labor Disputes

THE commission considered the bill making it unlawful to issue a temporary injunction or restraining order in labor disputes without notice, and providing that no person shall be punished for contempt of court in violating such restraining order without a trial by jury. Since there appeared to be a dearth of case information available and at hand from which to draw conclusions on which the commission might confidently stand, it pointed out that "essentially this is a matter for the consideration of the judiciary or codes committees of the legislature, and not for this commission," and that it "would be extremely loath to sanction a measure that might be interpreted as an attack upon the good faith and fairness of our judiciary."

Workmen's Compensation

BY FAR the largest part of the commission's report is given to the subject of workmen's compensation. A committee had been created known as the "Compensation Conference." This conference was composed of representatives of insurance carriers, both stock and mutual, the State insurance fund, the State federation of labor, organizations of employers and self-insurers, the Medical Society

of the State of New York, and the New York State Society of Industrial Medicine under the chairmanship of the executive secretary of the commission. The conference submitted to the commission a program of legislation which had been adopted by the conference after a joint meeting with the industrial board, such program including much of the proposed legislation suggested by the industrial board.

The commission recommended legislation on the following subjects: That the occupational-disease provisions relating to certain poisons include the words "or direct contact with" in each of the described processes; that the method of ascertaining the average earnings of seasonal workers be changed; that proportionate loss of an arm or leg should be considered in making an award; that the time within which an appeal be filed be changed; that whenever a hearing on a claim for compensation is begun before a referee all subsequent hearings thereon shall continue before the same referee; that the industrial board be permitted to modify an award on account of changing conditions or because of an incorrect rate such modification to be effective as to date of accident; that the statute of limitations be made more liberal in certain cases; that an extension of the time limit be allowed in occupational-disease cases; that the provisions regarding notice of an occupational disease be made the same as those regarding notice of accident, except that notice be given within 90 days instead of 30 days; that every insurance contract be deemed to include all the employees of an employer unless the policy, by express terms, excludes certain classes of employees; that only accidents causing lost time or continued medical aid should be reported; that the compensation law be extended to certain employments not carried on for pecuniary gain; that the method of ascertaining administrative costs be checked; that the State fund be permitted to insure under the Federal longshoremen's act; that a medical advisory committee be created which shall be an adjunct to the industrial council; that foreign insurance companies file with the superintendent of insurance a surety bond conditioned upon the payment in full of all compensation lawfully awarded due to any New York claimant; that the law be amended providing that lawyers of at least five years' experience be both appointed and removed by the appellate division of the supreme court, but that present referees continue during the pleasure of the commissioner, as at present, but with the power of removal by the appellate division on charges; and that no medical examiner in the department of labor shall have, directly or indirectly, any interest in the care and treatment of any injured workman or any office or clinic in which such treatments are given. With reference to the administration of the compensation law the commission recommended that all self-insurance service bureaus be licensed by the industrial commissioner, and that "runners" or claimants' representatives who are not attorneys be required to obtain licenses.

The report gave detailed attention to several cases of fraudulent claims, to perjury, and to improper applications for lump-sum settlements in compensation cases. The commission also discussed the question of adjournments, check-up of compensation payments, the files of the department of labor, practices of medical examiners in the department, attendance of referees at hearings, and the personnel of the bureau of compensation.

Investment and Speculation Features of Employee Stock Ownership

AN ARTICLE on employee stock ownership [1] by Willard C. Fisher in a recent publication deals with the effect of the policy of selling company stock to employees upon those purchasing the stock, both from the standpoint of its investment value and from its possible effect as an incentive to speculation.

The usual reasons given by American corporations for inaugurating a stock subscription plan are the desire to retain the services of the older employees, to increase their loyalty and efficiency and decrease labor agitation, and to afford the employees an opportunity for the safe and profitable investment of their savings; while a few companies have avowed frankly their wish to create a new demand for their securities. In the great majority of these plans, though, the predominant motive must be taken to be the benovolent purpose of assisting the employees to save. In spite of this commendable purpose, however, if the plans can not stand upon their value to the employees as a safe investment, they can not in any way be justified, the writer states, since purchase of stock by the average employee involves frugality, self-denial, and often the surrender of much of his independence, which should not be asked by an employer of his employees if there is any danger that their painfully acquired savings may be lost.

It was the purpose of this article to inquire whether the plans as they have worked out in actual practice meet this test, and the first question then is, What is a good investment for the average American employee, for the man whose family is dependent upon his earnings which may be interrupted from time to time through illness or unemployment, but who may by dint of careful saving be able to accumulate a moderate amount of capital for the inevitable rainy day?

There are many reasons why persons who are able to save only in small amounts should defer or omit altogether the purchase of securities. The most important step to be taken by a man in order to safeguard his family is, undoubtedly, to take out an adequate amount of life insurance, after which comes the ownership of a home and the establishment of a savings account. Under favorable circumstances this takes at least 10 years and the writer considers that these three things should take precedence over any other form of investment.

Importance of Safety in Investment

ASSUMING, however, that these needs have been taken care of and that the employee is ready to place his money in some suitable investment, and considering the purchase of securities only from the point of view of the needs of the investor, it is stated that there is no single instance in either the American or European experience to show that the ordinary employee will have any control or appreciable influence in corporation management, nor do such employees find that investment in company securities has given them the knowledge of the corporation's conditions and policies which would enable them to watch and to judge their investment.

[1] The Journal of Electrical Workers and Operators, June, 1928, p. 283: Employee stock ownership: Investment or speculation, by Willard C. Fisher.

The first requisite in any investment of their savings by employees should be that the investment is reasonably safe; that is, first, that the principal will not be subject to fluctuations in value, and second that the investment will insure a permanent income. The two are, of course, intimately connected and the income would be the most important feature if it were not for the proved propensity of the employee investor to sell out his holdings whenever their value is falling in the market. The speculative element comes in when consideration is given to the prospect of increased value of the principal, but it should not be considered at all by the true investor and certainly not by the workingman. If there is sound basis for expecting an increase in the value of the stocks it will have been foreseen by persons more conversant with the stock market than the industrial employee, and if it is not well assured it is the height of folly for the employee or any other person who can not afford to lose the money to make such investments. Even if the employee is fortunate enough to sell at an advance, the question of the reinvestment of the money presents a new problem with which he is not qualified to cope. The prospect of the gain in principal values can not be used by employers as an inducement to employees to buy the stock, as it is generally the company's purpose to have the employees hold the stock indefinitely as a tie with the employing corporation.

For investment purposes generally the only policies which are safe to follow in the buying of stocks are selection and diversification. That is, in the purchase of securities only those of corporations should be selected whose business, management, and history are such as to recommend them as safe and reliable investments and, as even then there is always an element of uncertainty, a further degree of safety is found in diversification or the purchase of different types of stocks, so that if one fails the total sum invested will not be lost. The most desirable securities from an investment standpoint are, first, bonds, and second, preferred stocks. The employee investor does not have an opportunity, however, to choose the type of security he wishes to purchase, and as a matter of fact common stocks are sold to employees twice as often as preferred, while in the very nature of the case it is impossible for employees to practice diversification.

Policies Followed in Selling Company Stock

THERE are three types of terms under which stock is sold to employees. The first plan, which is followed by a considerable number of corporations, is to buy the stock in the open market and sell it to the employees on the installment plan, by means of deductions from wages or salaries. In some cases the commercial rate of interest is charged on the unpaid amounts but the dividends on the purchased stock more than offset the interest charges. The second and more common policy is to sell the stock, either purchased in the market or newly issued from the corporation treasury, at a rate below the regular market price. In this case also the stock is paid for by partial payments, and dividends which overbalance the interest charges are credited to the buyer. The third plan, which is not so common as the second, is to offer the stock at market value or even above it, but giving some special reward or bonus in addition to the

dividends allowed under the other plans. In order to secure the additional bonus the employee may be required to carry the subscription to the final payments, or it may depend upon continued employment and ownership of the stock. Nearly all the plans provide that an employee may voluntarily cancel his subscription, with, in a majority of the cases, repayment by the company of all employee installments, together with at least a fair rate of interest.

It is of the greatest importance, the writer says, to remember that in probably more than half of the stock-selling plans, employees are not allowed to pay in full for the stock but may pay only in exact accord with the prescribed schedule of installments, so that the payments must be protracted for periods varying from about one year to five years or even longer. The shares are usually not delivered to the employee as fast as they are paid for but are held until the whole subscription is paid, and in several cases where the employees are allowed to anticipate the regular payments the stock is not delivered to them until the normal term has elapsed.

In a few instances the employees are guaranteed against a reduction in the value of the securities purchased by them, but in nearly all the plans the employee is left exposed to the full sweep of security fluctuations. The reduction or stoppage of dividends means a real loss to the small investor, although there may be a difference in opinion as to whether a temporary drop in principal values constitutes a real loss if dividends are maintained.

There are few stocks which have been offered and sold to employees which have not at least once fallen below the sale price. In this event the experienced investor holds his stock, but the average industrial investor is frightened when his stock falls, especially if the depression is either great or long continued. In this case he is inclined to sell and to take the loss, which to him is nearly always serious and sometimes disastrous. When the stock rises, on the other hand, the employee is just as much inclined to sell and to take his profits as are other people. To meet this situation, which defeats the company's purpose in offering the stock, a number of corporations exclude from the privileges of later subscriptions those employees who do not retain all or at least the larger part of their earlier subscriptions

Gains and Losses in Recent Years

IT WOULD be an impossible task to follow through all the gains or losses which employees have met in the plans of the different companies. The general movement of stocks in the past few years has been upward, so that the situation as a whole is much better than in a falling market, but no securities move steadily up or down without any reaction, and the writer has taken as examples, not the pronounced failures, but those stocks which have been successful and are generally pointed to as good examples of stock-selling plans. In many of the companies whose stocks have had the most spectacular rise, the plan has been so recent that the subscribers have not had time to complete their payments and take possession of their stock, but there are many others which have been in effect long enough so that part or all of the employees have participated in the enhanced values of the stocks, which in a few cases reach

really enormous figures. Among various companies cited as having more or less spectacular increases in the selling value of their stocks is one of the motor companies which sold the common stock to employees in 1919 at $100, which was par at that time. Since then there have been numerous stock dividends, in the first of which holders of the stock received shares of both common and preferred stock. By 1927 this and subsequent stock dividends had brought the value of the original $100 to $4,331.25 and in addition the regular and extra cash dividends had greatly increased the income from the stock. Although this is an extreme example numerous other cases are cited where employees have received large returns on their original investment. In this case and many others the increases in value came so steadily and with such slight reactions that hardly any subscriber would have been frightened into selling either at a loss or so as to miss all gain. There are certain other companies, however, whose employees have received large apparent profits from their stock purchases but in which the stock can not be regarded as a good permanent investment. A great many of the high-grade securities, the writer says, are of a sort which no poor man can afford to hold, as their market price is high in comparison with the dividends which they pay, or in other words they yield but a small return upon the money which is tied up in them. Employees who own securities in some of these companies are allowed to sell only a fraction of their stock and they therefore can not shift their holdings to some other type of security which would yield a considerably greater return. In spite of this, however, it is an indisputable fact that the greater number of ownership plans of recent origin have enabled employees purchasing during the upward rush of the security market to receive very considerable returns on the money invested.

To gauge correctly the results of the plans, however, it is necessary to go farther back and observe the effects of both good and bad times on such plans.

Of the outstanding plans which were instituted prior to 1920 there is not one which has not shown periods of decline, in some cases comparatively brief, but in numerous other instances the fall in the value continued until the employees had lost practically all of their investments. The history of these stock-selling schemes is such as to show that, broadly speaking, the promoted purchase of stock by employees is not investment but speculation, and often speculation of an extremely venturesome kind. That the great majority of American employers appear to realize this is shown, the writer says, by the fact that they have not joined in the much-advertised sales movement, and that employees understand it is shown clearly enough by their preference for the more active and speculative common stocks when they are given option of buying common stocks or preferred. Although preferred stocks are in general much safer as investments the speculative element is still present in them to a certain extent, and in years in which all stocks are more or less adversely affected employee holders of shares of preferred stocks are just as liable to be scared into selling these at a loss as they are if their investment is in the common stock of the company.

In regard to this speculative element which enters into the situation as a result of the rise or fall in value of the stocks the writer says:

It remains true that the larger number of the workmen who have speculated in their employer's stocks within the last few years have made gains; but it remains equally true that no small number have made losses, even disastrous ones. And in these tens of thousands of losses there have been many painful sacrifices for man, wife, and children, even to tragedy itself. Here alone is reason enough for condemning promoted employee stock ownership. The greater number of those who go to war return safe and sound. But we do not, on that account, proclaim warfare a safe and healthful activity.

Further, the fact that employee stock ownership is a stimulus to general stock speculation, Mr. Fisher says, is well understood by employers:

Most of them know that the purchase of their own stocks, especially the common stocks, is the sheerest speculation. They know that tens of thousands of employees have been led into crushing losses and that any such reversal of the stock market as always in the past has followed a prolonged upward movement must bring crushing losses to other tens of thousands who now appear to have a paper profit. Why, then, do so many persist in offering their stocks? That is another story, involving many "a bit of psychology" as one of their number called it, in describing his own procedure.

Legal Aid Work for Law Students in Pennsylvania

THE legal-aid committee of the Pennsylvania Bar Association, at its 1928 session held in Bedford Springs, reported on the progress of legal-aid work generally, in other States and in Pennsylvania in particular. Its account of progress in Pennsylvania contains a matter of interest to bar associations, legal-aid associations, and the public.

A step of immense importance has been taken in connection with the new rules for admission to the bar. These rules provide inter alia for an interneship of six months by the prospective member of the bar "in the preceptor's legal business and under his direction." The Pennsylvania State Board of Law Examiners has construed this to mean that time spent by a prospective lawyer in a legal-aid office is within the terms of the rules requirement.

To legal-aid work this means that there will be a constant stream of applicants for positions in legal-aid offices. These young men will serve largely for the experience they may secure, and under competent guidance will accomplish much work that will make of legal aid a more efficient instrument.

The importance to the law student is twofold. In the first place he will secure a varied experience in practice, such as he is not likely to be able to secure in even a large active office. In the second place he will see problems in legal ethics worked out which will emphasize to him the professional standards of the law.

The committee will appreciate information indicating whether any of the legal-aid groups in the State make use of law students under this interpretation of the rule and whether the results are satisfactory.

Report of English Conference on Industrial Relations

A BRIEF account was given in the Review for March, 1928 (p. 32), of the formation in England of a committee or conference composed of a number of large employers on the one side and of representatives of the Trade Unions Congress on the other, to discuss the whole field of industrial relations and industrial

reorganization. This body, generally known as the Mond Conference, has recently made public its first report, outlining the subjects it proposes to handle, giving the results of the discussions, and including several important recommendations agreed upon in the 10 joint meetings already held. This report is published in the Manchester Guardian of July 5, 1928 (p. 5). The most generally significant sections are those concerning trade-union recognition and the protection of workers from victimization, the establishment of a national industrial council and machinery for conciliation in trade disputes, and the rationalization of industry.

Trade-Union Recognition

BOTH sides are agreed that there should be the fullest and frankest recognition of the unions as representatives of the workers, and that this should apply to questions of general policy and fundamental principle affecting industry as a whole as well as to matters affecting individual industries.

Taking the first, it is recognized that the Trade Unions Congress is the most effective organization, and is the only body which possesses the authority, and can exercise such authority, through its general council, to discuss and negotiate on all questions relating to the entire field of industrial reorganization and the industrial relations necessary thereto.

As regards individual industries, it is agreed that the most effective cooperation can best be obtained by deliberation and negotiations with the accredited representatives of affiliated unions or of unions recognized by the Trade Unions Congress General Council as bona fide trade-unions.

It may be stated that it is now the usual practice of employers to negotiate with the unions on all questions of working conditions, including wages, hours, and other matters relating to the trade or industry. This practice and method of procedure has in our experience proved to be so beneficial that in our view it should be encouraged and extended.

It is therefore considered that it is definitely in the interests of all concerned in industry that full recognition should be given to affiliated unions or other bona fide trade-unions as already defined as the appropriate and established machinery for the discussion and negotiation of all questions of working conditions, including wages and hours, and other matters of common interest in the trade or industry concerned.

We further consider that negotiations between employers and workmen are facilitated by workmen being members of an affiliated union or other bona fide trade-union as already defined, and also by employers likewise being organized.

Victimization

VICTIMIZATION is condemned as an important cause of friction and unrest, and the desirability of abandoning the practice is urged.

It is agreed that it is most undesirable that any workman should be dismissed or otherwise penalized on account of his membership of a union, on account of his official position in a union, or on account of any legitimate trade-union activities, or activities recognized at present or in the future by the parties concerned, or allowed by agreement between the parties.

It is suggested that where a worker has been dismissed or otherwise discriminated against on account of his trade-union activities, some means should be established for a review of the case, and that at the hearing of the matter the two parties should be represented by the employers' organization and the trade-union, respectively.

National Industrial Council

THE proposals for the establishment of a national industrial council are generally looked upon as the most important part of the report. It is recommended that a continuing body should be formed, consisting of the general council of the Trade Unions Congress and an equal number of employers nominated by the Federation of British Industries and the National Confederation of Employers' Associations. This should have three main functions:

1. To hold regular meetings once a quarter for general consultation on the widest questions concerning industry and industrial progress.
2. To establish a standing joint committee for the appointment of joint conciliation boards, as set out in detail in the agreed resolution on the prevention of disputes.
3. To establish and direct machinery for continuous investigation into industrial problems.

The joint resolution on the prevention of disputes referred to rules out compulsory conciliation as being both unacceptable and undesirable, and stresses the need of developing in industry as a whole a sense of responsibility for avoiding industrial stoppages. The most valuable and helpful element toward this end, it holds, is the strengthening of good relations between organizations of both sides and their recognition of joint industrial responsibility. As definite means of preventing stoppages it is suggested that joint conciliation boards should be formed, composed equally of representative trade-union leaders and of employers representative of industry. An important proviso is that these boards "should be at liberty to consider and discuss in relation to industrial disputes all questions of any character relating to the industry under consideration."

Rationalization of Industry

THE report accepts the definition of rationalization accepted at the World Economic Conference held at Geneva in May, 1927, "the methods of technique and of organization designed to secure the minimum waste of either effort or material. It includes the scientific organization of labor, standardization both of material and of products, simplification of processes, and improvements in the system of transport and marketing." The resolutions adopted at the World Conference are indorsed, but emphasis is laid on the need of providing safeguards to insure that the interests of the workers do not suffer by the adoption of the measures found necessary to rationalize industry.

Reception of the Report

THE Trades Unions Congress accepted the report and approved of a continuance of the movement. The left-wing element, which has objected to the conferences from the beginning, brought forward a motion to the effect that the meetings with the employer group were of no further utility and should be discontinued, but this was defeated by a vote of 18 to 4. At the annual conference of the National Union of Railwaymen, which was held soon after the appearance of the report, an effort to dissociate the railway union from the movement was defeated by a vote of four to one. Several similar tests make it apparent that the trade-unions as a whole are behind

the peace-in-industry move. On the employers' side the position is not so certain. The Economist (London), in its issues for June 30 and July 7, calls attention to the fact that the employers have no representative body to speak for them, and that the attitude of the two bodies whom it is desired to bring into the movement is doubtful.

The trade-union section of the conference is representative, in the general sense, of the workers; the employers' members, though undeniably representative so far as personal position and prestige goes, are not representative in the sense that they can make binding agreements for the employers of the industries in which they are engaged.

The Federation of British Industries is a voluntary organization whose membership is partly individual and partly representative of organized groups, while that of the Confederation of Employers' Associations is by no means all-embracing. The employer members of the conference, who speak with their individual authority only, have yet to refer the proposals to the Federation of British Industries and the Confederation of Employers' Associations. The latter body has not always been very ready to move in the direction of agreement and accommodation. But it would be a very grave responsibility to put any obstruction in the way of so promising an experiment.

NOTE.—Under date of September 6 the Associated Press reports that at the annual conference of the Trades Union Congress, then in session, it was decided by a vote of 3,075,000 to 566,000 to approve the general council's endorsement of "Mondism," as the movement described above has come to be generally called.]

Report of Industrial Transference Board of England

THE Coal Commission, reporting in 1926, included among other recommendations one to the effect that the Government should "be ready to take all practicable measures for the assistance of any labor that may be displaced, or for facilitating its transfer, and should provide such funds as might be required for those purposes." (Labor Review, May, 1926, p. 55.) In accordance with this recommendation the Government announced on January 6 of this year the appointment of an industrial transference board for the purpose of facilitating the transfer of workers for whom opportunities in their own district or occupation are no longer available. (Labor Review, March, 1928, p. 215.) The report of this board has recently been issued as an official document.[1]

In discussing the general situation, the board points out that a double movement is going on in the industrial field. There is active progress among a large range of nonbasic industries, but on the other hand employment in some of the basic industries tends to become more and more irregular. The coal-mining industry is the most striking example of this process of contraction, and the board has concentrated its attention upon it.

Studying the extent of the problem, the board comes to the conclusion that in the coal-mining industry alone there is a permanent surplus of workers which can not be estimated at less than 200,000. There is also a probable permanent surplus in shipbuilding, iron and steel, and heavy engineering, which may amount to 100,000, though in this case no definite estimate is made. "By 'surplus' we mean the difference between the present insured personnel of the industry and the number of workpeople who can count with reasonable certainty

[1] Great Britain. Industrial Transference Board. Report. London, 1928. 83 pp. (Cmd. 3156.)

upon obtaining their livelihood from the industry." To a considerable extent, the surplus is concentrated in certain districts, and within these it too often happens that there are few, if any, other industries capable of absorbing the unneeded workers.

In the inland districts, many large communities, e. g., the Rhondda in South Wales, with a population of some 162,000, are dependent on one industry only—the coal industry; in others, the only alternative employment outside coal mining is in the iron and steel industries and, to some extent, in shipbuilding. * * *

In many of the districts concerned, the idea of a cyclical or transient depression must now be recognized quite unflinchingly as no longer tenable.

Suggested Methods of Relief

THE board considers several means of reducing unemployment which have been generally proposed. Raising the school-leaving age to 15 would cut off each year a considerable number of young entrants, and pensioning miners at 60 would remove a considerable number from the other end of the industrial group, but both these expedients are rejected on the main ground of expense. Relief works might be advisable if the unemployment were temporary, but the essence of the present situation is that there are more workers in these districts than the industry of the district can possibly absorb, so that nothing would be gained by giving them relief work, which can not in the nature of things be a permanent resource. In a few of the districts affected, alternative industries might be built up, and this possibility is worth considering; however, since most of the districts are unsuited to other industries, the method can not be utilized to any great extent. An actual transference of at least 200,000 workers seems to be essential. This policy is complicated by the fact that in many of these communities the people have lived in practical isolation from the rest of the world, and their own community has been the only one they have known.

In these areas the sense of ties of home and locality is strongly developed, and is a matter of natural pride. This gives these communities their strength of endurance and cohesion, but it is a psychological factor which operates against a policy of transfer.

While the transference is a tragedy for the workers concerned, it offers an opportunity to employers, for the industrial value of the surplus labor of the mining districts is high. The age groups 18 to 25 and 26 to 35, especially contain a high proportion of men of good transfer value. The availability of the miners for employment "gives to other industries an exceptional opportunity of recruiting personnel of the highest quality."

Methods of Transference

AS TO how the transference of 200,000 workers is to be effected, the report is rather indefinite. Stress is laid on the desirability of increased use of existing machinery, such as the employment exchanges, training centers for adults to fit them for employment in England, juvenile unemployment centers, and centers for training women for domestic service. Financial help to enable married men to take up employment in new districts is recommended, especially in the form of advances, to be repaid later, toward the cost of removal

and toward the temporary maintenance of their families when wages are not paid immediately upon entering new employment. Employers are urged, when in need of workers, to give preference to men from the regions of greatest distress.

Apart from private employment there are, it is estimated, some 120,000 employers of labor who normally employ more than five workers. If only even half of these, when they come into the employment market, would make it their business to give employment to one man or two men from the depressed areas, a real step would have been taken toward a solution.

To the objection that this would result merely in changing the personnel of the unemployed army without reducing its size, the board replies that this need not be true, because in any area there may be a demand for workers of a kind not unemployed there, and that filling such vacancies with the men from the stricken districts will benefit all concerned. Also, it is pointed out that in many of the more prosperous trades, there is a potential demand for labor which might be materialized.

Many of the workers in the heavy industries now unemployed are of high employment value. At a time of good or relatively good trade such as is now being enjoyed in a number of areas in this country, many employers are prepared to make an effort to start a good man. There are, in fact, many potential vacancies in industry "at the margin" which materialize upon the appearance of a suitable man for the job.

The plan of settling families upon the land by giving them small holdings is discussed and dismissed as being too expensive, and as being unsuitable except for such as had special experience fitting them for such a life. The settlement of families on the land in connection with afforestation schemes is considered far more hopeful, and the board urges that "every effort should immediately be made to create during the next three years sufficient holdings for at least 1,000 families from the depressed areas."

Emigration

EMIGRATION as a remedy is considered at some length. This would be the natural resource, but an examination of the statistics of migration over a period of years shows that since the war the British Dominions, Canada and Australia, are receiving fewer British immigrants than during the period 1909–1913. This decline has taken place at the very time when the Government, under the empire settlement act, has been trying to promote emigration to these two countries. One important cause of the decline, according to the report, is to be found in the vexatious restrictions imposed upon immigrants, and it is strongly urged that these should be modified.

Migration procedure is highly complicated, and formalities are numerous and restrictive. We are satisfied that they constitute a real discouragement to potential settlers. Nothing can be more vital or urgent than the need for a radical simplification of all this.

Apart from this, the cost of migration is a serious difficulty, and in this direction the Government might well give help.

Further, to facilitate settlement apart from the empire settlement act, there should be a reduction of the passage rates more nearly to the pre-war level. Something more than this is also needed in the present abnormal conditions here. Even with lower passage rates there are men who would be quite unable to find the money necessary for their ticket, clothes and funds on landing. Such needs ought to be met during the next few years.

Reception of the Report; Governmental Plans

THE report met with a mixed reception, the criticism which was most strongly urged against it being that it proposed merely a redistribution of unemployment, instead of its diminution. Road building, the drainage of land suitable if so treated for agriculture, works for the prevention of coast erosion, and the building of docks and harbors were all brought forward as constructive relief works which would have benefited at the same time the community and the unemployed, and would not have interfered with the training schemes and emigration plans indorsed by the report. The Government, however, showed no disposition to go beyond the terms of the report. On July 24th a debate on the general subject of unemployment took place in the House of Commons, in which the discussion centered around this report, and the Prime Minister announced the policy of the Government in connection with it. They planned at once, he said, to extend their training schemes to fit more young people for emigration, and in this connection the Colonial Undersecretary was to visit the Dominions at once; secondly, they would extend for another two years the scheme of export credits, which would otherwise end in September of next year; and thirdly, they had decided to bring into effect on December 1, of this year, the lower coal freights on railways which, as part of the de-rating scheme, would normally become effective October 1, 1929, this reduction to be confined to coal for export and foreign bunkers and for blast furnaces and steel works. Finally, to facilitate the transfer of married men from the distressed areas, the Government had authorized the employment exchanges to advance traveling costs for them and their families, to help in the expenses of removal, and for a limited period to make other advances when needed, until the transfer was completely effected, all of this by way of loan to be repaid in easy installments.

Later in the debate, the Chancellor of the Exchequer enlarged upon the aid the Government proposed to give to migration.

> In the first place, we are going to endeavor to make the migration of the population more easy by sweeping away some of the obstacles that intervene at present. In the second place, we are going to provide a larger grant for needy migrants to enable them to start when they reach the other side and to obtain the necessary outfit. In the third place, a scheme has been framed for securing the migration of approximately 2,500 boys, 7,000 single men, 2,500 families, and 2,000 single women from the mining districts alone, if the miners are willing to go, at a cost of £600,000 a year. Finally, we have in view schemes of settlement loans to assist the migrants when they reach their new destination in certain circumstances. The whole of this policy of stimulating empire settlement will certainly involve a new and heavy charge upon the exchequer which may ultimately rise, though not for some years, to a total of £2,000,000 a year.

[NOTE.—As an immediate measure the Government undertook to send a number of the unemployed to Canada to help in the wheat harvest, the time for which was approaching when the report of the industrial transference board was made public. The Canadian National Railway undertook to place 8,000 men and the Canadian Pacific assumed responsibility for 2,500 more. The men were to be helped to reach the harvest fields, assured work during the harvest, and, if they failed to secure permanent employment after the harvest was over, to be returned to their homes. When the plan was made public, there was an immediate rush of applicants, and approximately 25,000 were registered in the brief time between the announcement and the closing of the books. Applicants were subjected to a test as to their physical fitness for the work, which, it is stated, about one-half of those examined passed. Preference was given to unemployed miners. The first body of successful applicants sailed on August 10 and the last on August 18.]

CHILD LABOR

Children at Work and in School

Children in Street Trades

THE Children's Bureau has recently published the results of an investigation into the employment of children in street trades, covering eight cities: Atlanta, Ga.; Columbus, Ohio; Omaha, Nebr.; Wilkes-Barre, Pa.; Newark and Paterson, N. J.; Troy, N. Y.; and Washington, D. C. The studies in the first four cities were made in the winter and spring of 1922–23, but the cities were revisited in 1926 or 1927 to see whether the situation had changed. In the remaining cities the study was made somewhat later. Upward of 7,000 children were included in the survey; information concerning them was secured through personal interviews, through the school authorities, through juvenile court and family agency records, visits to the parents, and the like.

In each city newspaper sellers and carriers formed the largest group, child peddlers coming next; bootblacks were not numerous except in Newark. One reason for the popularity of newspaper work was that it did not necessitate absence from school, and another was that although some of the cities had laws prohibiting children under a certain age from entering it, there never seemed much difficulty about evading this provision, so that it could be undertaken by even the youngest. One striking fact brought out in the study is that although the age at which children enter most occupations is gradually rising, no such tendency is at work in connection with newspaper selling.

In each of the cities of the survey, children of 6 and 7 sold papers (in one city, two boys of 5). From 11 to 21 per cent of the newspaper sellers were under 10 years of age.

The findings of the survey in general confirm those of earlier studies. The moral influences surrounding the work of newsboys and other street traders are discussed, as well as the effect of the irregular hours, which are sometimes very long, the physical exposure involved, the interference with proper time for sleep, the diminished energy left for school work, the separation from the normal life of the family, and the tendency to develop a taste for the excitements of street life.

While it could not be said that the boys were absolutely forced into the life by poverty, it was evident that the economic factor played a considerable part.

Newsboys, speaking generally, come from poor families, not destitute, except in rare instances, nor even so poor that they will acknowledge that they could not exist without the earnings of their children of school age, but in circumstances often so far below any reasonable standard of comfort that the tempta-

tion for the boys to earn what they can is irresistible. It is not a question of widowhood or of desertion or incapacity of fathers—almost as many newsboys as other children have fathers supporting their families—but so many fathers earn so little that without the help of mothers or of children or of both the family is always hard pressed.

The similarity between the findings of this and earlier studies indicates that conditions are not growing better with any noticeable rapidity. As a means for improving them it is suggested that newspaper selling by children should be as carefully regulated by law as other forms of child labor. The legal control of street work, it is pointed out, has difficulties peculiar to itself, and except in a few places little has been done toward working out and putting into effect adequate methods of administration and enforcement, even where the laws themselves were satisfactory.

Certain legal provisions were shown to be essential to even moderately successful control of the street-trades problem. The first of these is a specific law or regulation applying to the street worker, for school authorities and labor officials have found that most street work can not be regulated by a general child labor law, the word "employ" in the latter type of law being almost invariably construed to mean the purchasing of the services of one person by another. Satisfactory regulations included a badge system; the placing of responsibility for enforcement definitely upon a single official; and the control of the issuance of badges and the street inspections by the same agency.

Bootblacking and peddling as occupations for children, it is recommended, should be definitely prohibited, as they have many of the disadvantages of newspaper selling without any compensating advantage.

School Attendance in Indiana

A VERY different picture is presented in a study recently issued by the National Child Labor Committee, entitled "School or Work in Indiana." Under the Indiana law a child may leave school at 14 only if he has completed the eighth grade of the public schools or its equivalent, and has an employment certificate; otherwise he must remain in school until 16. If a child leaves his job, he must return to school within five days. For the sake of finding how generally the law is obeyed, and how far it, in connection with the child labor law, meets the needs of the situation, an investigation was made in 1926–27, covering nine cities and towns, in which only those aged 14 to 18 were taken under consideration. The findings showed a very general observance of the law.

The census lists in the nine towns and cities studied showed 6,019 children between the ages of 14 and 17, inclusive. Of these, 4,984, or 82.8 per cent, were shown by the record to be in attendance at school. Of the 14 and 15 year old children (those of the study amenable to the compulsory school attendance law) nearly 97 per cent were so recorded; while of the 16 and 17 year old children (those to whom the compulsory school attendance law does not apply) two-thirds were shown to be in school.

Of the children who were out of school most were absent for perfectly legitimate reasons. Less than 1 per cent of those aged 14 and 15 who were out of school were at work, so that child labor as a reason for keeping children from school was practically negligible.

Several reasons are cited for the satisfactory condition found to prevail: First, the law is a good one, "reasonable, well-drawn, and thoroughly workable," second, those charged with the enforcement of the law are keenly desirous of carrying out both its spirit and

letter; there is close cooperation on the part of the different authorities, resulting in a uniform practice throughout the State; third, the parents themselves accept the idea that the children should go to school until at least 16; and fourth, the school system is excellent. The school is looked upon as a community institution which must meet the needs of a wide variety of children, and there is a genuine effort to make it both interesting and serviceable. One of the striking results of the whole attitude of the community is shown in the treatment of those who are backward or peculiar.

The feeble-minded myth has been largely dispelled. It is recognized that by no means do all children have the same ability or capacity for receiving training, but it is the aim of the school authorities to adjust the schools to meet the needs of the children. The theory that all children, at least till they are 16 years of age, should be under the guiding hand of the school has been thoroughly accepted. Little or no opinion was expressed that any large number of children should be excluded from school on the ground that they were unable to carry on the regular school work. There is a keen recognition of the difficulties that these dull or backward children present, but there is no desire to deny them because of alleged feeble-mindedness the opportunity to do the best they can and to get as much out of school as they are able.

The report includes also the result of a study of the children at work, which seems to show that the enforcement of the child labor law is not quite so successful as that of the compulsory school attendance law. On the whole, however, the situation is good, though some improvements are urged.

INDUSTRIAL ACCIDENTS AND HYGIENE

Studies of the Hazards of Spray Painting

THE Journal of Industrial Hygiene, June, 1928, contains an article by Dr. Henry F. Smyth (pp. 163–214) which brings together the results of the surveys [1] of the hazards of spray coating made by Doctor Smyth and his assistants for the Pennsylvania Department of Labor and Industry and the National Safety Council. The findings of both surveys are considered from the standpoint of the hazards presented by the different types of materials used; that is, lacquers and similar materials containing highly volatile and possibly toxic solvents; paints and enamels containing lead, turpentine, and mineral spirits; and vitreous enamels which contain more or less lead or toxic pigments and often a large proportion of silicious matter.

The field surveys included study of plant conditions and of the types of spray booths, air velocity measurements, and collection of air samples for chemical determinations, and the medical studies covered the medical and working histories of sprayers, physical examinations, blood-pressure readings, and urine and blood tests.

The types of industries in which the spraying was carried on differed in the two surveys. In Pennsylvania the majority of the objects sprayed were small articles such as furniture and small metal parts or machines, while in Detroit and Toledo, the cities covered in the second survey, much of the spraying was on larger objects such as automobile bodies, and as a result the air pressure on the spray gun was in general considerably higher. The time exposure was also greater in the latter group of plants as the work was of a more nearly continuous nature.

Lacquer Spraying and the Benzol Hazard

THE benzol content of the lacquers used in Pennsylvania varied from a negligible quantity to 50 per cent, but in the lacquers used in the automotive industry high benzol contents were rare, although tests for the amount of benzol in the air in the latter industry showed that there was much greater air contamination as a result of the methods of using the lacquers. The danger limit for benzol concentration in the air has been fixed at 100 parts per million for continuous exposure. The results of both the studies indicate that benzol can not be sprayed even in low percentages without accumulating in the air beyond this point and creating a hazard to the health of the sprayer unless he is protected. The exhaust systems in use in the plants were generally ineffective either because they were badly

[1] See Labor Review, September, 1927, pp. 59–61, and January, 1928, pp. 84–89.

designed, not kept clean, not properly adjusted, or not supplied with enough air. It was decided as a result of the tests that ventilation should have a minimum air movement past the sprayer toward the spray gun of from 150 to 200 feet per minute according to the type of spraying being done in order to reduce the benzol concentration to a safe limit. But even this is not considered to give complete protection, and the report states that air masks or helmets offer the only complete protection where the exposure is high or continuous. It is further stated that protection against the benzol hazard will be best secured by discontinuing the use of paints which contain more than the minimum amounts of benzol that may be present in the best commercial toluol and in the denatured alcohol—not over 0.5 per cent in all.

The Lead Hazard

IN THE spray painting which involved the hazard of lead poisoning the materials used included paints and enamels, automobile undercoats, and vitreous enamels sprayed on metal castings. The combined studies showed that there is always a possible hazard when materials containing appreciable amounts of lead are used. It was found that materials containing less than 1 per cent of lead may be fairly safe if reasonable care is taken and exhaust ventilation is adequate, but when materials containing more than this amount are used the operator should be provided with an efficient respirator or air mask. In the automobile and vitreous enamel industries it was found many workers are at present being leaded through lack of proper safeguards. It is recommended, therefore, that the use of paints or lacquers containing over 1 per cent of lead should be discontinued.

Hazard From Vitreous Enamels

THE spray gun is used in the spraying of vitreous enamels on metal parts of stoves, signs, scales, and other metal objects. The enamel used is a glaze composed of silicates and pigments which may contain more or less lead salts. In addition to the hazard from lead which is present in these paints there is a very definite danger from the inhalation of the spray containing very finely divided silicious matter. The silica in these glazes is present both in the form of combined silicates and as free silica. The examinations and tests carried out in both studies showed there was a definite silicosis hazard, especially from the material used in coating sheet metal, and it was recommended, therefore, that these glazes should be carefully balanced so as not to contain any free silica. Exhaust ventilation of from 150 to 200 feet per minute is regarded as sufficient to control the hazard fairly well. In the absence of exhaust ventilation the worker should always be protected by hose masks or respirators. In the spraying of metal the silicosis hazard was found to predominate where sheet metal is sprayed and the lead hazard where castings are sprayed.

Physical Examination of Workers

PERIODIC physical examinations are regarded as essential for all workers employed in spray painting with all types of materials within buildings, booths, or other indoor or inclosed spaces, whether with or without exhaust ventilation or the use of respirators or masks. It is considered that persons spraying compounds containing lead or benzol should be reexamined at least once every six months and that these examinations should include the various blood cell counts, while persons using silicious materials should be examined and have X rays of their chests made at least every two years.

No one should be employed on interior spray painting with paints containing lead or benzol if the physical examination shows that there is any condition present which would be aggravated by exposure to lead or benzol or if there is evidence of absorption of either of these poisons as shown by the presence of more than 20 stippled cells per 100,000 red blood cells; a certain degree of anemia shown by hemoglobin under 70 per cent or a reduction in the number of red cells below 4,000,000 per cubic milimeter for men and 3,800,000 for women; or a reduction in the number of white blood cells below 5,600 per cubic milimeter. No person should be employed in spraying vitreous enamel or other silicious material if the presence of fibrosis of the lungs or active tuberculosis is revealed by the X-ray examination of the chest. The occupation should be changed if upon reexamination there is any evidence of developing fibrosis or of progressive lead absorption as indicated by an increase in stippled red blood cells.

Methods of Avoiding Spray-Coating Hazards

FROM his observations in these two studies, Doctor Smyth has reached certain conclusions regarding the measures to be taken which will render this method of painting reasonably free from danger.[2] The spray gun as an industrial tool, he believes, has come to stay, and any attempt to forbid its use would simply arrest the wheels of progress. But while the process has introduced new health hazards and exaggerated some of the old ones in the painting industry, on the other hand, when the spray gun is properly used it is said to have lessened the hazards of certain processes, and Doctor Smyth believes that most of the materials in common use can be sprayed with a reasonable degree of safety if proper precautions are taken.

It was his purpose in writing the article under review to indicate the faults he observed in the spray-painting installations in the different plants he visited, and to show that in most cases they could be remedied with comparative ease and at small expense. From the standpoint of health alone the principal faults in the commercial spray installations in use were found to be in the location of the spray booth or the method of use of the equipment, the lack of cleanliness, poor design, and inadequate air supply. In general the

[2] National Safety News, July, 1928, pp. 25, 26: "Spray coating hazards can be avoided," by Henry F. Smyth, M. D.

user and not the designer or manufacturer of the equipment was said to be to blame for the failure to secure satisfactory protection for the worker.

Types of Booths Used

The first point to be considered in the spray painting installation is the location of the spraying equipment. It is essential that all indoor spraying should be done in a properly constructed booth, and the difference in size of the articles sprayed necessitates the use of different types of booths. The best type is automatic with a small opening for the placement and removal of objects, which are carried by track or wheel to the automatically controlled spray gun, which should be placed as far as possible from the feed opening. In one installation seen the articles being sprayed traveled past the operator in front of a glass window, the operator reaching through a hole in a curtain under the window to grasp the gun. Such an installation as this could be used only with a light spray as a heavy one would cloud the window.

The three-sided booth which is large enough to completely cover the article being coated is considered the best type for nonautomatic spraying. The exhaust ventilation should be from the rear or from slit exhausts on the sides and tops. The face area of the booth should be from four to eight times the area of the object being sprayed, and wide booths should have multiple fan installations or a large exhaust fan. The booth should be cleaned periodically, and walls and ceiling should be greased or papered or both. Open windows near the face of a booth often materially disturb the air currents, or they may even reverse the air flow and actually increase the worker's exposure. Fans should be located at the rear or sides of the booth and preferably low as most of the harmful substances in the paints either give off heavy vapors or are heavy solids. Indirect ventilation, if efficient, makes for cleaner fans and ducts and lessens the fire hazard.

Air Supply

It is essential that the air to supply the fan pull should be fresh, and it should be supplied, therefore, from special ducts rather than drawn from a room already full of fumes from other processes. Cases have been observed where most of the supposedly fresh air came through the drying room which was already heavily charged with lacquer fumes and one case of severe benzol poisoning is reported which was caused by the fumes created in another operation being drawn past the worker by his own exhaust fan.

Exhaust ducts are most efficient if they are short and straight or at least avoid sharp angles, and it is most important that they should be kept clean and the fan properly adjusted. If solids in suspension are used, as with vitreous enamel, ducts should not be horizontal, or if this can not be avoided they should be large and should be frequently cleaned as otherwise they are liable to become so clogged that they are practically useless. The exhaust fumes should be discharged at a point where they will not reenter the room or endanger others and the discharge openings should be protected from back pressure from the wind. A case is cited of ducts so placed in an angle of the building that the discharged air was carried into the next room through the open windows.

The one essential of satisfactory exhaust ventilation is said to be air movement past the sprayer's face toward the exhaust fans of at least 150 feet per minute, regardless of booth area or cubic contents. If the conditions enumerated above are maintained they materially assist in obtaining a satisfactory flow of air. If the fan power is sufficiently great, however, rates decidedly above these levels may be secured even though the other conditions are not so favorable. Thus in one case where a powerful fan was used a rate of over 350 feet per minute was noted at a booth which had a duct 50 feet long with three bends leading to an exhaust fan near the ceiling.

The data secured in the Pennsylvania survey show that these requirements are not extreme, as 14 per cent of the air measurements in the factories using lacquer and paint were over 150 feet per minute, 7 per cent were over 200 feet, and one was over 500 feet. Thirty-seven per cent of the vitreous enamel plants had an air velocity exceeding 150 feet and 24 per cent exceeded 200 feet per minute. In the National Safety Council study 11 per cent of the plants spraying vitreous enamel had an air measurement in excess of 150 feet.

Other Requirements for Safe Spraying

The location in the booth of the object being sprayed is also important, and in general the spray should be directed down rather than up. The pressure in the gun should be as low as is consistent with good workmanship, as with high pressure the amount of the toxic substances in the air is increased materially.

In interior decorating portable exhaust fans should be installed in windows, etc., and air masks should be worn where paints containing benzol or lead are used. No benzol or lead paints or lacquers should be used except in automatic booths or where the sprayer is equipped with a positive pressure air mask or helmet, and the same safeguards should be employed where quick-drying paints containing benzine, mineral spirits, turpentine, etc., are used.

Hazard of Benzol Poisoning in Chemical Laboratories[1]

THE HAZARD connected with the industrial use of benzol is well understood as a result of the various studies of the effects of this poison by such agencies as the United States Public Health Service and the National Safety Council.

In certain industries such as the rubber industry and the manufacture of paints and lacquers it is recognized that benzol constitutes a serious health hazard, and in most instances more or less effective measures are taken to eliminate or reduce the danger of benzol poisoning. It was only recently brought to the attention of the writer of this report, however, that benzol is also used to a considerable extent in chemical laboratories, particularly in those where tests are conducted in connection with rubber, paint, varnish, and oil products to determine the solubility of compounds in various solvents such as benzol, carbon disulphide, and acetone.

[1] United States Public Health Service. Public Health Reports, July 20, 1928: Benzol poisoning as a possible hazard in chemical laboratories, by J. J. Bloomfield.

Several such laboratories were accordingly investigated in order to determine whether or not the benzol was used in quantities or in such a manner as to create a health hazard. It was found that from 3 to 5 gallons of benzol were used each week in these laboratories, and that in certain tests the material was centrifuged with benzol, a process which liberated considerable benzol in the air. The amount of benzol in the atmosphere of these places was shown by air analyses to vary from 28 parts per million in one room to 223 parts per million in another, in the latter room two centrifuges being used intermittently for the tests.

In addition to the use of benzol for testing materials it was found that the workers in the laboratories were also using the solvent for cleaning apparatus and for washing off stains on their hands and arms. Its use in this way was very common, as many of the materials tested contained such substances as asphalt, coal tar, and varnishes which are difficult to remove, both from utensils and from the skin. In one laboratory as much as 3 gallons of benzol per week was used for this purpose. This practice, it is evident, releases additional benzol vapor in the air of the laboratory, and some less toxic solvent such as xylol should be used, therefore, for this purpose, even though the use of benzol for experimental purposes may be justified in certain instances.

As the workers in these laboratories are not exposed steadily to the fumes of the benzol it was felt that it was not practical to apply the standards of vapor concentration which had been fixed for industrial establishments, but that blood examinations would show more exactly whether or not the benzol as it was being used constituted a health hazard.

The earliest and most characteristic symptom in chronic benzol poisoning is a reduction in the number of white-blood cells, and the blood examinations of these workers showed that in three cases the cell count, while not definitely abnormal, indicated a departure in the relationship between the various types of white-blood cells which, coupled with a definite exposure to benzol, was indicative of benzol absorption.

It is recommended, therefore, as a result of the investigation that such solvents as toluol, xylol, or highflash naphtha should be substituted for benzol in chemical laboratories where possible, or if the use of benzol is continued it should be limited to the testing of materials only and should not be used as a cleansing agent. Also, that all laboratory workers exposed to the fumes of benzol should be given a thorough medical examination before employment and reexamined at frequent intervals thereafter. Any worker who, upon reexamination, shows any marked blood changes should be promptly excluded from benzol exposure.

Accidents on Steam Railroads in the United States in 1927

ACCIDENT Bulletin No. 96, recently issued by the Interstate Commerce Commission, presents statistics on collisions, derailments, and other accidents resulting in injury to persons, equipment, or roadbed, arising from the operation of steam railways in interstate commerce during the calendar year 1927. Reportable accidents,

which include those to employees wherein the disability causes him to remain away from work for more than three days, are tabulated under three primary groups: 1. Train accidents; 2. Train-service accidents; and 3. Nontrain accidents. The former includes those wherein railroad property is damaged in excess of $150 due to train operation or movement. The second covers those involving casualties in connection with the operation of cars or locomotives without damage to railroad property in excess of $150. Nontrain accidents include those occurring in connection with machinery and supplies, etc.

The report states that train-service accidents were responsible for 89 per cent of the fatalities, while 59 per cent of the injuries were due to nontrain accidents. For all classes, the number reported as killed in 1927 was 1.81 per cent less than in 1926 and the number reported as injured was 19.52 per cent less. The casualty rate per million locomotive-miles was 3.7 killed and 24.5 injured, as compared with 3.6 and 27.5 in 1926 and 3.6 and 27.4 in 1925. The following table summarizes the accident record:

SUMMARY OF ACCIDENTS ON STEAM RAILROADS IN THE UNITED STATES IN 1926 AND 1927

Item	Train accidents		Train-service accidents		Nontrain accidents		Rate per 1,000,000 locomotive-miles [1]	
	1926	1927	1926	1927	1926	1927	1926	1927
Trespassers:								
Killed	34	29	2,397	2,551	62	74	1.35	1.48
Injured	51	72	2,485	2,643	251	281	1.40	1.56
Nontrespassers:								
Employees on duty—								
Killed	190	194	1,101	972	295	324	.72	.67
Injured	1,589	1,211	32,337	26,715	77,315	59,642	18.70	16.05
Employees not on duty—								
Killed	3	1	75	67	6	8	.04	.04
Injured	41	10	235	221	386	424	.15	.13
Passengers—								
Killed	79	10	70	69	3	3	.08	.05
Injured	1,829	1,511	2,629	2,375	688	674	2.47	2.23
Persons carried under contract—								
Killed	2	6	11	13	1	1	.01	.01
Injured	258	157	406	388	90	89	.37	.31
Other nontrespassers—								
Killed	52	46	2,532	2,424	34	29	1.43	1.42
Injured	148	111	7,628	7,189	1,856	1,086	4.31	4.19
Total:								
Killed	360	286	6,186	6,096	401	439	3.63	3.67
Injured	3,916	3,072	45,720	39,531	80,586	62,196	27.49	24.48

[1] Nontrain accidents not considered in computing rate.

A table showing highway grade-crossing accidents indicates that there were 2,371 trespassers and nontrespassers killed and 6,613 injured—a decrease of 4.8 per cent in fatalities and of 5.4 per cent in nonfatal injuries as compared with 1926. One hundred and eighty-seven injuries resulted in death after the expiration of 24 hours from the time of the accident. It appears that automobiles, motor buses, and motor trucks were involved in 89.5 per cent of the total number of casualties at grade crossings, while passenger automobiles alone were involved in 71.3 per cent of the fatalities and in 75.4 per cent of the injuries.

Mining Accidents in Colorado, 1926 and 1927

THE ANNUAL report of the Colorado Bureau of Mines for the year 1927 contains a classification of accidents in metal mines and quarries, by cause, showing the nature of injury and the occupation. The following table gives a brief summary of this information, the rates being computed on the basis of man-days instead of man-hours as is usually done in accident statistics compiled by this bureau. Data for the year 1926 are included for comparative purposes. The report separates the nonfatal injuries into "serious" (time lost over 14 days) and "slight" (time lost under 14 days) without stating which classification includes those in which the time lost was 14 days. These have therefore been combined in the following table and new rates computed:

ACCIDENTS AND ACCIDENT RATES (PER 10,000 MAN-DAYS) IN COLORADO METAL MINES IN 1926 AND 1927

Place of injury	Employment (number of days)		Fatal accidents				Nonfatal accidents			
			1926		1927		1926		1927	
	1926	1927	Number	Rate	Number	Rate	Number	Rate	Number	Rate
Underground	1,286,684	1,218,168	26	0.20	21	0.17	726	5.64	745	6.12
Surface	356,873	363,253	3	.08	3	.08	183	5.13	159	4.38
Mills	281,405	315,463	------	------	4	.13	56	1.99	40	1.27
Smelters	447,114	301,695	2	.04	------	------	139	3.11	60	1.99
Quarries	255,143	243,077	3	.12	3	.12	290	11.37	205	8.43
Placer mines (dredges)	3,689	6,894	------	------	------	------	13	35.24	5	7.25
Total	2,630,908	2,448,550	34	.13	31	.13	1,407	5.35	1,214	4.96

Industrial Accidents in Pennsylvania, 1928

THE Department of Labor and Industry of Pennsylvania reports 72,898 nonfatal accidents for the first half of 1928, as compared with 80,933 during the same months of 1927, a reduction of nearly 10 per cent.

In the following table the number of fatal accidents and the percentage of increase or decrease in the periods mentioned are shown by industry groups. During the month of May, 1928, a disaster occurred in the bituminous mines, taking a toll of 184 lives and causing the large increase shown for that industry.

FATALITIES IN SPECIFIED INDUSTRY GROUPS IN PENNSYLVANIA, JANUARY TO JUNE, 1927 AND 1928

Industry group	Number of fatalities, January to June—		Per cent of increase (+) or decrease (−) in 1928
	1927	1928	
Construction and contracting	109	99	−9.2
Manufacturing	206	185	−10.2
Anthracite mining	271	250	−7.7
Bituminous-coal mining	202	374	+85.1
Transportation	111	76	−31.5
Public utilities	20	21	+5.0
Quarries and noncoal mines	21	16	−23.8
Trading	28	33	+17.9
State and municipal	47	62	+31.9
Miscellaneous	30	33	+10.0
Total	1,045	1,149	+10.0

Summarizing the record, the Department of Labor and Industry states:

The drive for safety organization in industry is beginning to show some very real results. The transportation industry has achieved an enviable record in fatal accident reduction for the first half of this year. The reductions recorded for the construction, manufacturing, and anthracite-coal mining industries also are worthy of notice. If it were not for the Mather disaster, the bituminous-coal industry also would have shown an appreciable reduction in fatal accidents. The increase of 15 fatalities in the State and municipal group evidently is due to the increased hazards encountered by those to whom the protection of life and property is delegated. There were 18 firemen and 14 policemen killed in the performance of their duties during the first six months of 1928. The work of constructing and repairing public highways also is becoming a hazardous occupation. Eighteen employees of State, city, and county highway departments were killed during the first six months of 1928.

LABOR LAWS AND COURT DECISIONS

Legislation as to Physical Examination for Occupational Diseases

AT THE 1928 session of the Ontario Legislature an act was passed to amend the mining act of the Province by adding thereto a section requiring every workman employed underground in any mine or in any ore or rock crushing operation to submit to an examination by a medical officer, appointed under the provisions of the workmen's compensation act relating to silicosis, at least once in every 12 months and to obtain a certificate from such medical officer certifying that the workman is free from tuberculosis of the respiratory organs. The section also provides that no workman shall be employed in underground work or in certain ore or rock crushing operations unless he has such a certificate. As this type of law does not exist in the United States and as it approaches the occupational disease problem from a different angle (requiring adult work permits), it is believed that the act is of sufficient importance and interest to be reprinted in full. Section 3 of the act, assented to April 3, 1928, provides as follows:

3. "The mining act" is amended by adding thereto the following section:

157a. (1) Every workman employed underground in any mine shall be examined by a medical officer appointed under the provisions of the workmen's compensation act relating to silicosis at least once in every 12 months, and every applicant for underground work to whom the certificate mentioned in subsection 2 has not been issued shall be so examined.

(2) If the medical officer finds upon examination that the workman is free from tuberculosis of the respiratory organs, he shall certify in the prescribed form that such is the case and shall deliver the certificate to the workman.

(3) Every such certificate shall remain in force for not more than 12 months from the date of issue, and if so required by the manager or superintendent of the mine in which the workman is employed, it shall be delivered to and remain in the custody of such manager or superintendent during the period of the workman's employment and shall be returned to him on his being discharged from or leaving the same.

(4) A like certificate shall be required in the case of a workman engaged in any ore or rock crushing operation at the surface of the mine except where the ore or rock is crushed in water or a chemical solution and is kept constantly in a moistened or wet condition.

(5) Except as provided in subsection 4, a workman as to whom such a certificate is not in force shall not be employed in underground work in any mine or in ore or rock crushing operations at the surface of any mine.

(6) The chief inspector of mines may exempt from the foregoing provisions of this section such mines as do not contain silica in quantity likely to produce silicosis or which for any other good and sufficient reason the said chief inspector deems should be exempt nor shall such provisions apply to workmen employed underground for a less period than 50 hours in any one calendar month.

(7) The lieutenant governor in council may make regulations prescribing the nature of the medical examination to be made and the form of certficate to be issued under the foregoing provisions of this section and generally for the better carrying out of the requirements of this section.

Physical Examination for Occupational Diseases in the United States

INDEPENDENT of workmen's compensation legislation the labor legislation of the several States contains two general types of laws concerning the physical examination of individuals suffering from occupational diseases. The most numerous type is that which makes it the duty of retained physicians having knowledge of persons whom he believes to be suffering from certain occupational diseases contracted as a result of the nature of the employment of such persons, to report the same to the department of labor or the department of health. Laws of this nature exist in Connecticut, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, and Wisconsin. These laws are very similar in their general nature and differ only in minor respects, except possibly the Massachusetts law which provides that the "department may require every physician," etc., to report the occupational disease.

The second type of law is found in five States and is aimed at the prevention of occupational diseases. These laws include, among several others, a provision which requires the monthly physical examination of certain employees engaged in occupations in which the hazard of occupational disease is great. The Ohio, Pennsylvania, and New Jersey acts are aimed principally at the "lead hazard," while the Illinois and Missouri laws cover a greater number of diseases.

Disagreement of Arbitrators Under Railroad Labor Act

THE Circuit Court of Appeals of the Seventh Circuit has decided that arbitrators acting in arbitration proceedings instituted and conducted under the railroad labor act of 1926, can not agree to disagree prior to the time at which the arbitration agreement ends.

Certain railroads represented by the conference committee of managers, Western Railways, and the firemen, helpers, hostlers, and outside hostler helpers in the service of the railways represented by the Brotherhood of Locomotive Firemen and Enginemen entered into an arbitration agreement on August 6, 1927, under the terms of the railroad labor act of May 20, 1926 (44 Stat. at L. 577). On November 9, 1927, the parties agreed to an extension of the time within which a final decision should be reached to and including December 20, 1927. On December 5, 1927, the board of arbitration filed a memorandum expressing its inability to agree, which memorandum was filed with the clerk of the United States district court. On December 9, 1927, a representative of the brotherhood requested the chairman of the board to reconvene and to continue its deliberation. The chairman of the board notified the members and the meeting was held on December 17, 1927. The two arbitrators representing the railways declined to attend the meeting. However, the other four members of the board met on December 17 and made an award.

A petition was filed by the Atchison, Topeka & Santa Fe Railway Co. and others to impeach the award, but the district court denied the petition and the case was taken to the United States Circuit Court of Appeals. That court, on May 24, 1928, affirmed the action of the

lower court. After quoting from the railroad labor act the court pointed out that the provisions of the law requiring a time limit to be set forth in the written agreement for the periods was mandatory and that arbitration concerning which Congress was legislating related to matters of public interest. The court said that, "reading the three sections together (the section prohibiting withdrawals, the section fixing a time limit within which the award must be reached, and the section permitting a majority of the arbitrators to make an award) we find a complete plan for the settlement of disputes, which is not consistent with appellants' (Atchison, Topeka & Santa Fe Railway Co.) contention that it may be defeated by the arbitrators 'agreeing to disagree' before the expiration of the time fixed in the agreement to arbitrate." The court further pointed out that "to contend that third parties—strangers to the agreement—might modify the agreement (limit or enlarge the powers of the arbitrators) would be absurd, Only the parties to the agreement could modify it or withdraw from it. Consequently, the agreement as originally entered into remained in effect until terminated by lapse of time." (Atchison, T. & S. F. Ry. Co. et al. *v.* Brotherhood of Locomotive Firemen and Enginemen, 26 Fed. (2d) 413.)

Unlawful Assembly and Unlawful Arrest

TWO interesting cases involving labor disputes in which the Governmental authorities of New Jersey and Colorado exceeded their power in interfering with labor activities were reported during June, 1928.

From August 1 to October 6, 1924, there was an industrial strike among the workers in the silk mills of Paterson, N. J. On September 26, 1924, and continuously thereafter until and including October 6, 1924, the strikers were prevented from holding their mass meetings in Turn Hall by order of the chief of police of that city. On the evening of October 6, 1924, a procession of persons marched from the union headquarters of the Associated Silk Workers to the City Hall plaza, a distance of a block and a half, led by two women bearing an American flag, behind whom walked John C. Butterworth and others. The purpose of the meeting, as set out in printed posters, was to protest against the alleged unlawful acts and supposed oppression of the police in excluding the strikers from Turn Hall and in preventing the continuing of their daily meetings therein. A police officer read the riot act or proclamation and the police dispersed the crowd. Butterworth and others were arrested, indicted by the grand jury, and convicted of holding an unlawful assembly based upon the common-law offense declared to be a misdemeanor by section 215 of the crimes act of New Jersey. This conviction was affirmed in the Supreme Court of New Jersey on November 1, 1927. (139 Atl. 161.)

The case was taken to the court of errors and appeals, where the judgment of the lower court was reversed on May 14, 1928. (State *v.* Butterworth, 142 Atl. 57.) The court of errors said that "the right of the people to meet in public places to discuss in open and public manner all questions affecting their substantial welfare,

and to vent their grievances, to protest against oppression, economic or otherwise, and to petition for the amelioration of their condition, and to discuss the ways and means of attaining that end, were rights confirmed and guaranteed them by the Magna Charta, Petition of Right, and the Bill of Rights, the mainstay of the British Constitution, and the bases of both our Federal and State Constitutions. Of course, it goes without saying this inestimable boon of liberty was to be enjoyed by the people in a peaceful and law-abiding manner." The court referred to the constitutional guaranty found in the Federal and State Constitutions, and summed up the offense of unlawful assembly as "any gathering together of three or more persons, with intent to disturb the public peace, accompanied by some overt act or acts to effect that intent." As illustrations of the character of the overt acts the court pointed out that "if those gathering were armed, or were conducting themselves in such a disorderly manner as to give firm and courageous persons in the neighborhood reasonable grounds to apprehend a breach of the peace as a result thereof, such gathering would be an unlawful assembly." The court pointed out that in order to institute the offense "it must appear that there was a common intent of the persons assembled to attain a purpose, whether lawful or unlawful, by the commission of such acts of intimidation and disorder which are likely to produce danger to the tranquillity and peace of the neighborhood, and have a natural tendency to inspire rational, firm, and courageous persons in the neighborhood with well-grounded fear of serious breaches of the public peace." In reaching the conclusion that the facts elicited by the testimony did not establish the offense of unlawful assembly as charged in the indictment, the court said that—

> The trend of the testimony was that the object of the meeting was to protest publicly against action taken by the police authorities which prevented the strikers from holding their meetings to vent their grievances in a public hall. The object of the meeting, therefore, was per se not an unlawful one, and an indictment for unlawful assembly could not properly be predicated upon the mere fact of holding the meeting in a public place. It was essential, in order to constitute an offense of "unlawful assembly," that the meeting be held and conducted in such a manner as to reasonably create in the minds of firm and courageous persons a well-founded fear of threatening danger to the public peace. We find an utter absence of any such proof.

The second case arose out of a strike involving an armed clash in Weld County, Colo. Following an attempt of a group of persons to trespass on private property, several ordinary officers of the law fired upon the group, killing and wounding a few. The governor of the State called out the State militia under an order which vested in the militia commander authority to suppress the alleged insurrection by whatever means he, in his good judgment, deemed best. No attempt was made to declare martial law, to suspend the writ of habeas corpus, or to put aside the civil authorities in the two counties into which the State militia was sent. The courts within the two counties continued to function the same as they did before the emergency arose. In addition to this regular form of government a body of 35 militiamen, acting under the governor's orders, had exercised arbitrary power, arresting people and holding them, without charges that they had violated the law, committed any act of violence, or resisted or defied the peace officers of the State. Several persons were arrested. An application was made for a writ of habeas corpus to secure their release

from custody in the United States District Court for the District of Colorado. (United States *v.* Adams, 26 Fed. (2d) 141, reported June 28, 1928; date of decision not given.) The district court granted the writ and the prisoners were discharged.

The court stated that the proposition presented for decision was that "the governor has the power to grant at will a roving commission to a body of State militia to go into any part of the State that he may see fit, arrest and detain citizens, and deprive them indefinitely of their liberty and the rights guaranteed them by the Federal Constitution, actuated, as in this case, by the best of motives." The court said that "the mere commission of crime does not justify extraordinary remedies or setting aside the constitutional guaranties." It further stated that "there either must be martial law or no martial law, and, until there is, no rogatory body can lawfully go around in this State, depriving individuals of the rights that the Constitution, both State and Federal, guaranties," that "either that matrial law is justified and declared, and the territory taken over, and the civil power made subordinate to the military, or else they must recognize the civil power, and allow it to deal with the situation."

Decision of State Supreme Court in Morris & Co. Pension Plan

CONTRIBUTORS to the private industrial retirement and pension fund of Morris & Co. had prior rights over retired pensioners for the amount of their contributions, on the winding up of the affairs of the company, and retired pensioners could not hold the company liable for future pension payments according to a recent decision of the Supreme Court of Illinois.

Morris & Co., for many years engaged in meat packing and kindred industries, on January 1, 1909, established a plan for the retirement of certain of its employees who had completed 20 years of continuous service and had attained the age of 55. The plan provided that the company would contribute the sum of $25,000 per year until the "Morris & Co. Pension Fund" had reached the sum of $500,000. The rules provided that the employees were to contribute to the fund 3 per cent of their salaries. The rules further provided that in case of voluntary resignation of an employee all payments made by him to the pension fund should be returned without interest and in case of discharge all payments with interest, computed semiannually, at the rate of 4 per cent. Morris & Co. made annual contributions to the fund of $25,000 as required by the rules and in addition made contributions amounting to $980,000. On March 31, 1923, Morris & Co. sold its business and property to Armour & Co. and ceased to do business. It discharged all of its employees with the exception of a few who were retained for a short time to wind up the affairs of the company. At that time there were 398 retired employees, more than 2,000 active contributors to the fund, and $1,476,567.03 in the fund. The pension fund committee proceeded to and did refund to the contributing employees the amounts which they had contributed to the fund plus interest at 4 per cent, which amounted to $1,111,651.96, leaving in the fund $364,915.07, or an amount sufficient to continue the monthly payments to the retired employees for a period of possibly 17 months from March 31, 1923.

Several of the retired employees who had been receiving payments out of the pension fund brought suit against Morris & Co. and others in the Circuit Court of Cook County, Ill., to determine the rights of the retired employees under the retirement plan. The case was dismissed and the Appellate Court of Illinois affirmed this decision. The case was then taken to the Supreme Court of Illinois. These retired employees, among other things, contended that they had a vested right in the continuation of the fund for their benefit; that Armour & Co., being in full possession of information concerning the pension plan when it purchased the business and assets of Morris & Co., was also liable under the implied contract of Morris & Co. to continue the pension fund; and that a conspiracy existed between Armour & Co. and Morris & Co. to deprive the pensioners of their rights.

The supreme court held that the retired employees did not have a vested right to any of the property or income of Morris & Co. to pay their pensions but must look wholly to the fund. The court said that before a business firm is required by contract to continue in business or to answer in damages for failure to do so, it must clearly appear that an express or implied contract to do so existed; and that in this case Morris & Co. did not impliedly contract to continue in business or to keep alive the employees' pension fund until all claims were fully paid, in view of the rule limiting the payment of all sums to the pension fund and providing that no pensioner should be entitled to have any part of the company's capital or income set aside to provide payments to pensioners. The court further held that where the rules not only provided for retirement payments from the employees' pension fund, but for the contract right of each contributor to withdraw his contribution when dismissed from service, the retired employees were bound by the rules covering the pension fund, and therefore did not have a vested right in the fund prior to that of contributing members. (Cowles *v.* Morris & Co., Supreme Court of Illinois, April 21, 1928, 161 N. E. 150.)

Continuation School Law of New York Held Constitutional

THE New York law requiring certain employed minors between the ages of 14 and 18 to attend continuation schools has been held constitutional by the Court of Appeals of New York. Abraham Braunstein was convicted in New York of a violation of section 601 of the education law in that his son failed to attend a continuation school in New York City. The boy was over 16 years of age, had successfully graduated from a public school, and had attended the high school for six months, but because of his father's financial losses he was obliged to leave school and go to work. He had attended a continuation school for a time. In addition, he attended a night high school and a night preparatory school, as he was anxious to obtain the necessary educational qualifications to begin the study of law. His employer informed him that his absence at the continuation school during office hours was so serious a handicap that he would be obliged to discharge him. Thereupon the boy, to save his position, ceased to attend the continuation school. The case

was taken to the court of appeals on constitutional objections to the statute. The chief complaint against the statute was that as night schools had been created and are recognized and regulated by the department of education, the boy should be excused from the continuation day school if he attends the night school.

The court of appeals, in upholding the constitutionality of the law, discussed this problem in such an interesting way that that part of the decision is quoted in full:

> There is a reason for the distinction. That children, at work all day, should also be compelled to study at night is an evil in itself. Probably, under present conditions, it is an evil that may not be wholly corrected. So far as possible it should be minimized. Day-school attendance should be encouraged. Many employers may cooperate in carrying out the policy of the department. Others might not. They might insist that their employees attend night schools to avoid the interruption, thus making such attendance in effect compulsory. Once we had a law requiring children working in the daytime to attend evening school. The experiment was abandoned. It was found that their health was injured out of all proportion to the value of the education they received. The requirement as to girls also involved moral hazard. That should not be done indirectly which was found unwise when done directly. In truth, the evening schools are intended primarily for those who have reached maturity. And even four hours a week in a continuation school is not a mere waste of time. They do not confine themselves to vocational training. Optional courses may be taken leading to general education. For these reasons we think the distinction made by the legislature between day and night schools is justified.
>
> All minors in districts where continuation schools exist are treated alike. And treated as a labor law rather than as one affecting education solely, it is not discriminatory. It separates those who have completed a four-year secondary course from those who have not. It seeks to induce all to do so. If they will not or can not, it makes their right to work subject to the necessity of acquiring some further daytime instruction. The legislature might forbid all minors under 18 to engage in regular work during the hours of the school day. It might require them to spend those hours in study. It may do less. (People *v.* Braunstein, 162 N. E. 89, decided May 29, 1928.)

Protection of Employee Against Removal of Employer's Place of Business

THE MOVEMENT of large industrial enterprises or even small businesses may bring disaster to employees through the loss of employment and possible loss in the value of their homes. To meet this problem there now seems to be a tendency to develop some type of protection against sudden changes by those controlling an enterprise which supports large numbers of persons and even in cases where the removal is made necessary because of the exercise by the Government of its right of eminent domain in establishing watersheds and for other purposes. Three pieces of legislation are here presented as representative of this unusual and interesting development.

Reimbursement by State for Wage Losses

THE State of Massachusetts has decided to make additional provision for the water-supply needs of its metropolitan district and in pursuance thereof at its legislative session in 1927 (ch. 321) passed an act providing, among other things, for the taking over of property within the watershed which it created. Section 5 of the act provides for the allowance of damages for real estate and business within cer-

tain defined territory which is not taken but the value of which is decreased and also for businesses located near but outside the area described in the act, and damages in loss of employment or diminution of wages of certain residents of the towns of Dana, Enfield, Greenwich, Prescott, or New Salem. The provision with regard to allowing wages is sufficiently interesting to be quoted in full. It provides as follows:

> Any resident of the towns of Dana, Enfield, Greenwich, Prescott, or New Salem at the date of the passage of this act who had been for the six months next previous thereto regularly employed therein in a manufacturing establishment or in an established business or upon any lands and is not the owner or part owner of any interest in any such business or lands who, by the carrying out of the provisions of this act, is deprived of such employment and obliged to seek other employment or has suffered a diminution in wages shall, if upon reasonable effort he has been unable to secure such employment or to avoid such diminution in wages, be entitled to recover either by agreement with the commission or in the manner hereinafter provided in this section his damages in loss or diminution of wages, not exceeding, however, the amount of wages received by him for the six months previous to such loss of employment. No person shall have any right of recovery for more than one such loss of employment or one such diminution in wages under the provisions of this paragraph, and no person shall have the right to recover for both injury to an established business under the provisions of the preceding paragraph and for loss of employment therein.
>
> Any wage earner who at the time of the passage of this act resides in the town of Dana, Enfield, Greenwich, Prescott, or New Salem who makes no other claim for damages under this act shall in case he is forced by the carrying out of this act to remove to a locality more than 8 miles from land required to be taken in fee under the second paragraph of section 4 of this act be repaid the actual cost of such removal to an amount not exceeding $50.

Another type of law protecting the employee's right to prevent the sudden removal of his employer's workshops and business may be found in two laws, slightly different from each other and therefore given separate consideration.

Reimbursement in Case of Moving of Railroad Terminals

AT THE 1921 session of the Montana Legislature an act was passed (ch. 159) requiring railway and railroad companies to reimburse employees for property losses sustained from removing terminals or division points. Section 1 of this act provided as follows:

> SECTION 1. That when any railroad or railway company operating its line of road in, into, or through the State of Montana shall move any of its division points or terminals, it shall be liable to any employee of such railroad or railway company for any damage sustained by such employee by reason of any decrease in value of any real property actually occupied by such employee as his place of residence, which decrease in value shall be caused by reason of the removal of such division point or terminal, provided such employee shall have in such property so damaged an estate of freehold. Such damages shall be collectible in any court of competent jurisdiction.

Another example of this tendency to stabilize industry in a particular locality is the act of the Legislature of Oklahoma, passed during the 1917 session (ch. 225). It appears that the St. Louis-San Francisco Railway Co. had maintained railroad shops and a division point at Sapulpa, Okla., from 1890. In 1917 the railway indicated the purpose to remove these shops and the division point to Tulsa, Okla. During the 1917 session of the legislature an act was passed prohibiting the removal of railroad shops and division points for a period of not less than five years without securing the permission of the

Corporation Commission. Section 3 of the act, which provides for hearings before the Corporation Commission, is interesting as showing the intention of the legislature and is therefore quoted in full as follows:

SECTION 3. When an application is filed before the commission for the removal of terminals or car shops, as provided in section 2, the commission shall hear evidence on the relative efficiency and expense of handling traffic through the proposed terminal as compared with the present facilities, and shall consider all other facts and circumstances affecting the various interests involved. In determining the adequacy of the present facilities the commission shall consider the same increased by an expenditure equal to an amount necessary to remove the same to the proposed location or an amount equal to the necessary expenditure to establish such facilities at the new location. It is hereby further provided that the commission shall hear evidence and shall make a finding of fact as to the sanitary and habitable conditions of the proposed location with reference to whether the same would endanger the health of the employees of the applicant or the health of their families. If the commission should find that the sanitary or habitable conditions at the proposed location of said terminal facilities would endanger or injuriously affect the health of the employees of said applicant or their families, the commission shall deny said application and order the said terminal facilities and car shops to remain at the present location.

On February 19, 1917, the Corporation Commission of Oklahoma issued, upon complaint of citizens of Sapulpa and upon notice to and hearing of the railway, a temporary restraining order enjoining the removal of the shops and division point from Sapulpa to Tulsa. The railway acquiesed in this order and no further action was taken for nearly 10 years. During December, 1926, while the restraining order issued in 1917 was in force, the railway, without leave of the commission and without making any application in the cause, directed that the division point for passenger trains be changed in January, 1927, to Tulsa and it indicated a purpose to remove its shops to West Tulsa. The commission fixed a date on which a hearing was to be held and meanwhile it prohibited the railway from making any change. Whereupon the railway brought suit in the United States District Court for the Northern District of Oklahoma, in which court an injunction was obtained enjoining the commission from hearing the cause pending before it and from taking any other action therein; from making or enforcing any order restraining the railway from removing its shops and division point from Sapulpa; and specifically from putting into effect a contemplated passenger train schedule on January 23, 1927, the schedule being intended to facilitate the change of the division point. The decree of the district court did not declare the Oklahoma statute unconstitutional nor did it state any reason why the action enjoined was a violation of the railway's rights, nor did it state that there was any danger of irreparable loss.

The case was appealed to the Supreme Court of the United States where the decision of the district court was reversed on May 31, 1927. (Lawrence et al. *v.* St. Louis-San Francisco Railway Co., 47 Sup. Ct. 721.) The court did not determine whether the Oklahoma act was obnoxious to the Federal Constitution. Mr. Justice Brandeis, speaking for the court, said that the interlocutory decree of the district court set the railway free to remove the shop before the case could be heard in final hearing.

By ending the status quo which had existed for 10 years, it exposed the city and its citizens to danger of irreparable loss. The change subjected Sapulpa to grave and immediate peril. Removal of the shops, which had been located in

Sapulpa for a generation, would probably affect property values seriously, and might bring disaster in its train. It might ruin businesses. It might result in unemployment. It might compel many of Sapulpa's citizens to seek homes elsewhere. On application for an interlocutory injunction such considerations are of weight.

The court then pointed out that the decree disregarded the requirement of section 19 of the act of October 15, 1914 (ch. 323, 38 Stat. 730, 738), "that every order of injunction * * * shall set forth the reasons for the issuance of the same, shall be specific in terms * * *," and therefore reversed the decree.

Railroad Repair Work to be Done Within State

AN INTERESTING type of law tending to prevent the transportation of railroad property upon which repair work is to be done to another State is found in three States. These laws make it a criminal offense, in certain cases, for a railroad company to have its repair work done outside the State. This type of statute, first passed by the Legislature of Louisiana (acts of 1908, No. 297), was used as a model and with slight modifications is now the law in Texas (acts of 1909, ch. 33), and in Arkansas (acts of 1915, No. 220).

The Louisiana act provides as follows:

SECTION 1. *Be it enacted by the General Assembly of the State of Louisiana*, That all railway or railroad corporations operating in the State of Louisiana, and having their repair shops within the State, as a condition precedent to exercising the right of eminent domain under the laws of the State of Louisiana, the railway or railroad corporations so operating within the State of Louisiana shall and are hereby required to repair, renovate, or rebuild in the State of Louisiana any and all defective or broken cars, coaches, locomotives, or other equipment, owned or leased by said corporations in the State of Louisiana, when such rolling stock is within the State of Louisiana: Provided such railway shall have or be under obligations to have proper facilities in the State to do such work, and provided this act shall not be so construed as to require any railway company to violate the safety appliance law of Congress, and provided further that no railway company shall be required to haul such disabled equipment a greater distance for repairs at a point in Louisiana than would be necessary to reach repair shops in another State.

SEC. 2. All railroad corporations operating in the State of Louisiana, and having their repair shops within the State, shall be prohibited from sending or removing any of their cars, coaches, locomotives, or other equipment out of the State of Louisiana to be repaired, renovated, or rebuilt, when the same is in a defective or broken condition and within the State.

SEC. 3. Any corporation, lessee, receiver, superintendent, or agent who shall violate any of the provisions of this act shall, after conviction by a court of competent jurisdiction, be liable to a fine of not less than $50 or more than $200, or be imprisoned for not more than three months or both at the discretion of the court.

The Montana Legislature in 1927 passed a resolution requesting all railway companies operating in the State to do substantially that which is covered by the criminal provisions of the Louisiana, Texas, and Arkansas laws.

Legal Requirements as to Qualifications of Employee Must be Reasonable

THE Supreme Court of Arizona has held unconstitutional a law of Arizona which requires that employees acting as telephone operators for the purpose of receiving or transmitting messages governing the movement of trains shall have one year's experience as a telegraph operator.

Paragraph 403 of the Penal Code of Arizona, Revised Statutes of 1913, provides as follows:

> No railway company, or corporation operating a line or lines of railway within this State, shall hire, employ, or permit any person to act as telegraph or telephone operator for the purpose of receiving or transmitting messages, orders, or other instructions, governing or affecting the movement of any train or trains, unless said person shall be at least 18 years of age and have had not less than one year's experience as a telegraph operator.

E. J. Tilson, a conductor in the employ of the Atchison, Topeka & Santa Fe Railway, on April 18, 1925, while in charge of a freight train running from Gallup, N. Mex., to Winslow, Ariz., stopped at Cheto, Ariz., a station without a telegraph operator, and called the train dispatcher at Winslow by telephone for information as to the movement of his train. He received instructions concerning such movement. Tilson was 51 years old and had been a conductor 20 years but had never been a telegraph operator, though he had used telephones since he was 15 years of age and had had experience with railroads in taking orders respecting the movement of trains. The Atchison, Topeka & Santa Fe Railway Co. was convicted of violating paragraph 403 (above quoted). An appeal was taken to the supreme court of the State in which the judgment of the lower court was reversed and the statute condemned as unconstitutional in so far as it made an unreasonable arbitrary basis of classification and violated the Federal and State Constitutions.

The court said that the only inquiry was whether the requirement of one year's experience as a telegraph operator was a reasonable or arbitrary measure. It was pointed out that the purpose of the statute was to promote the safety of the crew and passengers of the train. The problem was whether the provisions of the law were adopted to that purpose. The court pointed out that neither in the act itself nor in the evidence in the proceedings was there anything indicating that one year's experience as a telegraph operator would make one more efficient as a telephone operator and that the ability to hear or talk over the phone could in no way be enhanced by one's experience in sending or receiving messages by telegraph for a year or even a longer period. "Instead of producing the result desired its only effect is to reduce to a very small number the class from which those who use the telephone for receiving or transmitting orders or messages affecting train movements may be selected, and while this alone would not render it obnoxious to the constitutional provisions invoked, since it operates uniformly upon all of that class, yet its effect is to make a classification founded upon an unreasonable and arbitrary basis which renders it violative of both the State and Federal Constitutions." The means used to accomplish the ends sought in paragraph 403 are wholly unsuited to its attainment. "The qualifications which the legislature may prescribe one shall have as a prerequisite to following certain professions, callings or occupations must tend, in some degree at least, to better qualify the person for such profession, calling, or occupation before it can be said that a law requiring them promotes the public welfare or safety. Otherwise there is no limit and the constitutional provisions against interfering with the liberty of contract or prohibiting the passage of laws granting to any individual or class a special privilege

have no reason for existence." (Atchison, Topeka & Santa Fe Railway Co. *v.* State Supreme Court of Arizona, March 19, 1928, 265 Pac. 602.)

Industrial Detectives Law of Wisconsin Declared Constitutional

THE Wisconsin Legislature for 1925 passed an act requiring the licensing of private industrial detectives (acts of 1925, ch. 289). The act defined "private detectives" as including, among others, "those persons known as inside shop operatives; that is, persons who do not undertake direct employment whether in shops or otherwise with the owner of a place of employment but who are engaged by some independent agency to operate or work in such place of employment, and to render reports of activities in such place of employment, to such independent agency, or to the owners of the place of employment under the direction of such independent agency."

On March 15, 1921, Floyd M. Andrews and others, doing business as the Baldwin-Andrews Detective Service, obtained a license under the provisions of section 175.07 of the Wisconsin Statutes of 1923. The detective service began the performance of service for the La Crosse Refrigerator Corporation on June 10, 1925, and on that day chapter 289 of the acts of 1925 was passed, which acts were published on June 13, 1925. No license was obtained under the acts of 1925. Suit was brought by the detective service against the refrigerator corporation and a judgment was obtained, from which the refrigerator corporation appealed to the Supreme Court of Wisconsin. The question before the court was whether the detective service could recover for services performed after the passage and publication of chapter 289 of the acts of 1925. The Supreme Court of the State reversed the judgment of the lower court holding that as the detective service had failed to bring itself within the provisions of the statute they were not entitled to recover for the services rendered. The court met the contention of the detective service that chapter 289 was invalid because it impaired the contract between the detective service and the refrigerator corporation by the statement that the detective service might have complied with the law and continued the performance of its contract. The court said that if the argument of the detective service was sound, the operation of laws enacted in the exercise of the police power might be indefinitely suspended by the terms of contracts of private parties. (Andrews et al. *v.* La Crosse Refrigerator Corp., et al., June 18, 1928, 220 N. W. 214.)

Refusal to Work With Nonunion Workmen in New York [1]

SEVERAL corporations organized in certain States in the northeastern section of the country for the purpose of manufacture, installation, and maintenance of pipe organs and other musical instruments were engaged in the installation and maintenance of pipe organs in the city of New York. All of the corporations except one manufactured the organs in other States and transported them to

[1] Aeolian Co. et al. *v.* Jacob Fisher et al., U. S. District Court for the Southern District of New York. United States Daily, Washington, June 26, 1928, p. 8.

New York. The corporations employed their workmen under the open-shop system. Attempts were made to unionize the employees engaged in the installation and maintenance of pipe organs in New York City, and to this end threatened that if any concern should employ nonunion labor in such work it would be prevented, by the action of the New York Building Trades Council and the unions associated and affiliated with it, from completing contracts, through the refusal of the members of the affiliated trades to work upon buildings when such contracts were being performed.

It was alleged that there had been no dispute between employers and employees since a strike called in December, 1925, had been settled. However, it was alleged that after the strike of 1925 the Organ Workers Local Union No. 9, through its delegate, caused the members of various building trade-unions engaged in building trade operations or theatrical workers where organ workers were at work to join in building-trade strikes or sympathetic strikes, and by causing or threatening such strikes has coerced and intimidated the general contractors, architects, or owners to cancel their contracts or to delay the work by causing the organ workers to work at night or at other times, or to delay their work until the buildings had been completed.

A preliminary injunction was sought restraining the labor unions' organizing work. The injunction was denied, May 15, 1928, by District Judge Thatcher in the District Court for the Southern District of New York. The jurisdiction of the United States district court was claimed upon the ground of diversity of citizenship and upon the ground that there was a conspiracy in restraint of interstate commerce. The court said that "it seems entirely clear that this case can find no support in the Sherman Act, as amended by the Clayton Act." The court pointed out that the cases of Bedford Co. *v.* Stonecutters Assn. (274 U. S. 37) and Duplex Co. *v.* Deering (254 U. S. 443) were not in point, as in the present case there was not intent, express or implied, to exclude nonunion products from interstate commerce. "Strikes were not called or threatened against the use of plaintiffs' organs, but only against the employment of nonunion labor in the local work of installation and maintenance. The court said that the case was governed by the principles applied in Industrial Assn. *v.* U. S. (268 U. S. 64, 77) and United Mine Workers *v.* Coronado Co. (259 U. S. 344, 410, 411).

As everything had been done through peaceful persuasion, without threats of violence or unlawful act, "the question presented is whether it is lawful for union men engaged in the construction of buildings and in the operation of theaters to refuse to work while nonunion men of another craft are at work on the premises."

In passing on this question the court said:

> In considering this question it is important to bear in mind that the plaintiffs' employees are entirely content. They have no controversy with their employer regarding their wages or the hours or conditions of their employment. It is indeed entirely clear that Organ Workers Local No. 9 is attempting to coerce the employment of union labor, not through the exercise of its members' right to strike but by persuading members of other crafts to exercise their right in its behalf, and thus indirectly to accomplish its purpose, which it failed to accomplish in the general strike of 1925.
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> In this State, a secondary boycott is not illegal per se, and is condemned only if inspired by malicious intent and purpose to destroy the good will or business of those against whom it is directed. (Cf. Bossert *v.* Dhuy, 221 N. Y. 342, and

Auburn Draying Co. *v.* Wardell, 227 N. Y. 1.) In Duplex Co. *v.* Deering, supra, the secondary boycott there in question was not held illegal under the laws of this State. The opinion of the court did not rule on the question, resting decision solely on the Sherman Act as amended by the Clayton Act.

That workingmen may organize for purposes deemed beneficial to themselves, and in their organized capacity may determine that their members shall not work with nonmembers, or upon specified work or kinds of work, is the settled law in this State. (Bossert *v.* Dhuy, supra; National Protective Assn. *v.* Cumming, 170 N. Y. 315.) It was therefore not unlawful for the defendant unions to forbid their members working with nonunion men employed in the same craft. Self-interest in such a case is sufficient justification, and injury to others is incidental to the exercise of a personal right.

How far the members of a craft may go in their organized capacity in refusing to work in the same building with nonunion members of other crafts is a question not so simple of solution. It depends upon the extent to which those who cooperate have in point of fact a common interest and are justified in what they do by honest motives to advance self-interest, as opposed to malicious intent to injure the business or good will of another. It is seldom possible, with any certainty in the correctness of conclusion, to decide such a question upon affidavits and counter-affidavits submitted upon motion for preliminary injunction.

The mere refusal to work upon premises where nonunion men are employed is certainly not illegal per se. Nor can it be said that sufficient facts are disclosed to warrant conclusion that the refusal to work was without justification under New York law upon valid grounds of self-interest. This leads to a denial of the motion.

Mining Hours Law of India

THE Legislative Assembly of India recently passed an act amending the mining act of 1923 by limiting the hours of work per day to 12. Under the earlier act hours were restricted to 60 a week for surface workers, and 54 for those employed underground, but there was no limit upon the daily hours. The present act, introduced in March, 1927, and passed in March, 1928, is given, with a summary of the discussion which attended its passage, in the Bombay Labor Gazette for June, 1928 (pp. 876–885). It forbids the employment of any worker in a mine for more than 12 hours in any consecutive 24, except that when a mine is worked on the shift system, a shorter intermission is permitted once a week to permit a periodic rotation of the shifts. Also, under certain circumstances, which are specified, emergency employment for a period longer than 12 hours may be permitted. With these exceptions, a worker may not be employed in more than one shift a day, nor may a worker who has worked a shift in one mine be employed in another mine within that 24-hour period. Hours of beginning and ending work must be posted outside each mine, and notice of any change in hours must be given at least seven days beforehand. The act is to come into effect April 7, 1930.

The labor members of the assembly made an effort to limit the daily hours to 8 instead of 12, and to bring the act into effect by April, 1929, but were unsuccessful in both attempts. The select committee to whom the act had been referred explained that an eight-hour day was undesirable in the worker's interest. The Indian miner is paid on the basis of production, and his normal output is three tubs of coal daily, with four for the better workers. He is not accustomed to steady, uninterrupted work, and if hours were limited to eight a day, they doubted whether the average worker could produce three tubs a day, and if he did not, his earnings would fall below even

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their present standard. The committee recognized, however, that the 8-hour day is the goal toward which the law should move, and they therefore recommended that after the act has been in operation for three years, the situation should again be examined to see whether a shorter shift might then be practicable.

Rumanian Act for Protection of Women and Children

ON APRIL 8, 1928, a law was promulgated in Rumania for the protection of woman and child workers.[1]

It is the purpose of the Rumanian Government to regulate all matters concerning labor by one law, so that unity in the principles and methods of labor legislation enforcement may be achieved, and commissions have been appointed to draft a labor code. A special commission has been created to study the most suitable methods of making effective the provisions of the conventions which have been ratified. The work of these commissions is almost finished but there may be some delay as both the Government and Parliament are to examine the draft labor code as a whole.

The law of April 8, 1928, was passed by Parliament on the Government's initiative for the purpose of avoiding additional delay in carrying out the provisions of the conventions ratified.

Part II of the act relates to working hours:

The normal hours of actual work, not including rest periods, are fixed at 8 in the day or 48 in the week.

The law applies to (1) mines, quarries, and all other extractive undertakings; (2) industries in the accepted sense of the term; (3) transport of persons or merchandise by road, railway, or inland waterway, and the handling of merchandise in docks, quays, wharves, etc., with the exception of transport by hand.

The following classes of undertakings or persons are exempt from the provisions limiting hours of work: Undertakings which employ members of the same family, under the immediate authority of the head of the family; seamen and boatmen employed in transport by sea or on inland waterways; persons holding positions of supervision or management, or employed in a confidential capacity; home workers, and those employed on domestic work.

In accordance with local custom or agreement between the parties concerned, hours of work may be reduced on certain days, or work may be entirely suspended, and the hours distributed over the other days of the week, provided the weekly limit is observed and hours of work on any one day do not exceed 10 (the object of this provision is to permit the introduction of the English week and the five-day week).

In the case of work carried on in shifts, hours may be distributed over a period of three weeks, provided that average hours of work do not exceed 8 in the day or 48 in the week. Hours may be distributed over other periods when necessary by reason of the nature of the undertaking (seasonal industries) or atmospheric or agricultural conditions, or when the normal limits are considered inapplicable. The average hours of work must in no case exceed 48 in the week.

The following exceptions are provided:

Chapter II provides for the following exceptions: (1) Average hours of work may be extended to 56 in the week in continuous processes; (2) the normal limits may be exceeded in the case of accident, actual or threatened, in case of urgent work to be done to machinery or plant, or in case of force majeure to avoid serious interference with the ordinary working of the undertaking; (3) the limit does not apply to preparatory or complementary work which must necessarily be carried on outside the limits laid down for the general working of an establishment, exceptional cases of pressure of work for the purpose of increasing production, and

[1] International Labor Office. Industrial and Labor Information, Geneva, July 2, 1928, pp. 17, 18.

intermittent work. As regards the last group of exceptions, regulations will be drawn up after consultation with the organizations of employers and workers concerned, if any such organizations exist. Overtime under (1) and (2) is to be paid for at a rate 25 per cent higher than the usual wage.

Moreover, the ministry of labor may reduce the hours of work in undertakings or occupations which are regarded as unhealthy or dangerous. Such ministry is charged with the drawing up of tables indicating the classes of undertakings and occupations which are included in the exceptions.

Factory inspectors are to issue permits for overtime; in exceptional cases, however, the employer may on his own authority extend working hours for a period not to exceed three days, but must advise the factory inspector of such action within three days.

In the event of war or danger to public safety, all provisions in regard to hours of work may be suspended by the Government.

Another section of the law deals with penalties.

It is also stipulated by the act "that the validity of the provisions relating to hours of work depends on the maintenance of the Washington hours convention on which they are based."

Labor Legislation in Yugoslavia

IN YUGOSLAVIA approximately 85 per cent of the population is rural or agricultural. The mines and industrial establishments are in general manned by workers from the rural section who regard their industrial occupations as temporary and after short periods of service drift back to the farms. The Government, however, has enacted a number of labor laws, a digest of some of which is given below, the data being taken from a recent report of the Department of Commerce.[1]

Measures to Prevent Strikes

IN 1920, as the outcome of a steadily growing disposition of the workers in the mines and on the railways to strike for wage increases and for political reasons, the Government promulgated two decrees, dated respectively December 15 and December 24, 1920, providing that in the case of a strike or threatened strike such workers "may be mobilized and these services operated by the military forces of the Kingdom." Since the issuance of these decrees there have been no strikes on the railways and but few in the mines. The few industrial disturbances in the mines have been due mainly to the demand for higher wages to meet the increased cost of living and have in general been settled in favor of the workers.

An act which became effective June 14, 1922, deals with the relations between employers and employees in the wage-earning class. Under this act the function of arbitration falls within the jurisdiction of the Ministry of Social Politics.

[1] U. S. Department of Commerce. Bureau of Foreign and Domestic Commerce. Trade promotion series No. 61: Kingdom of Serbs, Croats, and Slovenes (Yugoslavia)—A commercial and industrial handbook, by Kenneth S. Patton. Washington, 1928, pp. 30, 34–36.

Hours of Work and Labor Conditions

AN 8-HOUR day and a 48-hour week are provided for hired labor in all mining, industrial, and commercial undertakings, both public and private. The working-day, however, may be extended to 10 hours if four-fifths of the workmen agree thereto. Time and a half must be paid for overtime. Night work is prohibited for women and for children under 18 years of age; minors under 14 years of age may not be employed in any kind of work. The employment of pregnant women within two months before and two months after confinement is forbidden. Woman employees who have nursing infants must be allowed rest periods to nurse these children, and nurseries must be provided.

Owners of industrial enterprises must "see that all workrooms, as well as all machinery and material used, constitute no danger to the life and health of the workmen." Owners of enterprises located over 3 kilometers from town and employing over 100 workmen are obliged "to establish and maintain at their expense an emergency hospital for first aid to sick or injured workmen and the necessary lodgings for the accommodation of the workmen of the concern."

Organization and Representation of Labor

THE law authorizes laborers to establish organizations to protect "their economic, cultural, and moral interests," and makes compulsory the creation by the State of representative labor bodies, called "chambers of labor," to deal with employers. In general, each Province of the Kingdom has a chamber of labor.

The law provides for the election in every industry of labor delegates, who are chosen from the working people by the working people, but "serve the interests of the employers as well as of the employees." Their duties include:

> (1) The promotion of good relations between the employer and the workmen, (2) participation and collaboration in the making of collective contracts between employers and workmen, (3) assistance in enforcing strict compliance on the part of both employer and employees with these contracts, (4) acting as intermediaries between employers and workmen in case of disputes arising out of the working relations, such as questions of wages, with the object of settling them peacefully; when unsuccessful and a strike is imminent, they are required to solicit the intervention of the Government authorities.

Employment Bureaus

LEGISLATION provides for the organization of a central employment office at Belgrade and local employment offices "in all the more important industrial centers." These bureaus are auxiliary agencies of the Ministry of Social Politics, by which they are directly controlled and financially supported.

Workmen's Insurance

A COMPULSORY workmen's insurance act, effective July 1, 1922, provides indemnity against pecuniary loss arising from sickness or accident. "The obligation of insurance rests equally upon the workman and upon his employer." The law is applicable to practically all classes of laborers, with the exception of those occupied in agriculture and those who are irregularly or casually employed.

Unions of Tradesmen

THE number of tradesmen in Serbia, South Serbia (Macedonia) and Montenegro is reported as about 32,000. These tradesmen, the shoemakers, tailors, carpenters, artisans, etc., have their own unions, of which there are 127 in Yugoslavia. In Serbia, South Serbia, and Montenegro the formation of such unions was made compulsory by a law of June 29, 1919. Under the provisions of this law any person opening a shop or establishing a trade must become a member of the local union before he can secure a license to engage in business.

WORKMEN'S COMPENSATION AND SOCIAL INSURANCE

One Year Under the Longshoremen's Act

AFTER more than 10 years' experience with the administration of the United States civil employees' compensation act (39 Stat. 742), the United States Employees' Compensation Commission was given the power to administer the provisions of the United States longshoremen's and harbor workers' compensation act (44 Stat. 1424). Difficulties involved in the administration of this act were apparent to those who had followed the attempts of Congress to extend workmen's compensation acts to longshoremen (40 Stat. 395, 42 Stat. 634, and 44 Stat. 1424). The longshoremen's act became effective July 1, 1927. The following article is an attempt to summarize the most important events occurring during the first year of its operation for the benefit of those interested in the administration of this law.

The 14 districts into which the United States has been divided for the administration of the act now have deputy commissioners who are hearing cases and awarding compensation. Two States, California and New York, have passed laws furthering the cooperation of the State with the Federal Government. (California Acts of 1927, ch. 589; N. Y. Acts of 1928, ch. 750.) A central organization has been established in Washington which has maintained close contact with every development and which is seeking to administer the law liberally and with the greatest uniformity possible. Opinions approved by the commission numbered 33 at the end of the year, the first 30 of which were printed [1] and are now available for distribution.

At the end of the year very few cases had found their way into the courts. This is consistent with the policy of the commission, which seeks to reduce litigation to the minimum. One case has tested the constitutionality of the act. This case arose in the New York Supreme Court for King's County out of a suit for damages based upon the Jones Act (41 Stat. 988) by a longshoreman, Chernik, who was injured on August 15, 1927. The suit was dismissed on the ground that the longshoreman's sole remedy was under the new Federal longshoremen's and harbor workers' act of March 4, 1927. The Clyde Steamship Co. had qualified as a self-insurer under the compensation act. The case was taken to the highest court of the State, the court of appeals, where Chernik contended that the longshoremen's act attempts to deprive the courts of the admiralty jurisdiction vested in them by article 3 of the Federal Constitution,

[1] U. S. Employees' Compensation Commission. Longshoremen's and Harbor Workers' Compensation Act. Opinions Nos. 1 to 20, Aug. 12 to Oct. 26, 1927. Washington, 1927. 29 pp. Opinions Nos. 21-30, Nov. 25, 1927, to Jan. 26, 1928. Washington, 1928. 51 pp.

takes property rights without due process contrary to the fifth amendment, denies litigants jury trial contrary to the seventh amendment, and deprives longshoremen of rights that other seamen possess contrary to the fourteenth amendment, longshoremen having been held to be seamen under the Jones Act. The Clyde Steamship Co. contended that Congress was competent to legislate in admiralty and that the Supreme Court of the United States had sustained such acts—the Jones Act and others—modifying the admiralty law; that the longshoreman's act does not deprive the courts of jurisdiction but simply takes away a right of action; that the act does not deny jury trial because there is nothing to try; that the act is not class legislation because longshoremen are not really seamen, and besides the inhibition of the fourteenth amendment applies to the States and not to the Federal Government. The court of appeals affirmed the judgment of the lower court, dismissed the suit, and upheld the act as constitutional without an opinion on April 10, 1928. It is believed that this case will be taken to the Supreme Court of the United States to settle the constitutional questions involved. (Chernik *v.* Clyde Steamship Co. See Industrial Bulletin of New York, Vol. No. 7, April, 1928, p. 225.)

Another case arising out of the longshoremen's act is that of Colonna's Shipyard (Inc.) *v.* Lowe, Deputy Commissioner, decided in the District Court for the Eastern District of Virginia on November 16, 1927 (22 Fed. [2d] 843). This case involved the claim of one Thomas E. Brent, employee of the Colonna's Shipyard, who sustained an injury while working as a painter on a staging erected on the deck of the cradle of a marine railway around the stem of a vessel of 4,000 tons burden resting on the railway. The deputy commissioner made an award in favor of Brent. A bill for an injunction against the deputy commissioner was filed in the United States District Court. Brent was not a party to the injunction proceedings, filed no answer, and did not appear. The case was decided before the United States Employees' Compensation Commission had any legal representation in the courts as the Department of Justice had declined to instruct district attorneys to act.[2] The case practically went by default and an injunction was granted, the facts stated being from the employer's bill in equity. The court pointed out that section 3 of the longshoremen's act provides that "compensation shall be payable under this act in respect of disability or death of an employee, but only if the disability or death results from an injury occurring upon the navigable waters of the United States (including any dry dock) and if recovery for the disability or death through workmen's compensation proceedings may not validly be provided by State law." The court said that "it is obvious that the Federal act is applicable only if there may be no recovery for disability or death through a State compensation law, for it says so in precise terms," and "since the vessel and the railway on which she was drawn were then both on high land, and the injury was sustained under those conditions, the tort was nonmaritime. * * * , the injury here was on dry land, it follows that the Virginia State compensation act is valid, and the Federal law in-

[2] Letter from W. W. Warwick, chief counsel, U. S. Employees' Compensation Commission, dated Aug. 6, 1928.

applicable." The United States Employees' Compensation Commission does not consider this decision a final settlement of the question as to marine railways. The United States deputy commissioner at Norfolk is making awards against the Colonna's Shipyard and its insurance carrier in cases of injury occurring on the maritime railway dry dock, and the insurance carrier is paying such claims. It may be added that the commission has covered situations similar to that in the Colonna's case in its opinion No. 30, of January 26, 1928. The word "validly" in section 3 of the longshoremen's act, quoted above, the commission points out, was inserted for the purpose of declaring that compensation shall not be paid under the Federal act if the case is one that constitutionally is within the jurisdiction of a State, and conversely that payment can not be made under a State law if the case be one constitutionally under the Federal authority which has been exercised by the enactment of the longshoremen's act. Congress intended to provide in this act for the cases the Supreme Court had held States could not provide for, and no others.

Because of the view of the Attorney General of the United States that it did not devolve upon the district attorneys for the various districts to represent the compensation commission by filing an answer for its deputy commissioner, it was necessary to obtain an act of Congress removing all doubt upon this subject and making it the duty of a district attorney to appear as attorney or counsel on behalf of the United States Employees' Compensation Commission or its deputy commissioners when either is a party to a proceeding under the longshoremen's and harbor workers' compensation act. This act (Pub. No. 349) was approved and effective May 4, 1928. This is the only amendment passed by Congress to the longshoremen's act up to the present time. On May 15, 1928, the commission issued instructions for the handling of suits brought against them under the act and outlining the procedure to be followed in securing the cooperation of the United States district attorneys.

Two cases have resulted in opinions by two United States district courts but they have not yet been reported. On May 10, 1928, a memorandum opinion was handed down in the District Court of the United States for the district of Massachusetts in the case of the United States Fidelity & Guarantee Co. *v.* Deputy Commissioner et al. This case involved the death of a workman who had signed articles as a member of the crew of a ship, who was under the control of the master while on board, and who was paid according to the amount of oil which he made, but was paid by Dodd & Co. instead of directly by the vessel. The man was swept overboard while the ship was 100 miles off shore. The court held that the workman was a member of the crew of the ship and was outside the scope of the statute, and that the death did not occur "upon the navigable waters of the United States."

On June 26, 1928, the district judge of the Southern Division of the United States District Court in the Northern District of California, in the case of Francis Perry *v.* United States Employees' Compensation Commission, Warren H. Pillsbury, deputy commissioner for the thirteenth compensation district, and L. Lorentzen, upheld the decision denying a compensation award to the master of a vessel

who met his death because of an explosion while he was engaged in starting the engine of another vessel owned by the same employer. It was contended that the fact that Perry met his death on another vessel than his own removed him from the class not entitled to compensation, but the court held that the vessel upon which he was the master belonged to the owner of the vessel upon which he was killed; that his acts while aboard the vessel on which he was killed were connected directly with the navigation of that ship; and that he had virtually exchanged duties with the master of that ship but had not lost his status as master of his own ship.

The United States longshoremen's and harbor workers' compensation act has been administered during the first year with great foresight and with active cooperation with all parties, with an absence of that spirit which breeds litigation, and with a liberal interpretation acceptable to those concerned. Congress, by act of May 17, 1928, extended the provisions of this law to the District of Columbia (Pub. No. 419, effective July 1, 1928), giving the United States Employees' Compensation Commission the authority to administer the act.

The commission now administers compensation acts covering Federal employees, longshoremen, and employees in the District of Columbia.

Wisconsin Experience as Regards Remarriage of Widows Having Children

THE Wisconsin Industrial Commission in Bulletin No. 10, Wisconsin Labor Statistics, gives statistics as to remarriage of widows with children, compiled from its compensation experience from July 1, 1923, to May 1, 1927. From this experience the commission has reached the conclusion that the remarriage rate is highest during the first year of widowhood. Remarriage is inversely correlated with age and number of children, and proportionately more lump-sum compensation settlements were granted to widows who remarried than to widows who did not remarry.

No widows with children who remarried were over 37 years of age at the date of the husband's death.

WISCONSIN COMPENSATION EXPERIENCE AS TO REMARRIAGE OF WIDOWS WITH CHILDREN, JULY 1, 1923, TO MAY 1, 1927

Age of widow at death of husband	Duration of widowhood to date of remarriage or date of inquiry (in years)	Number of widows reported			Method of payment of compensation claim			
					Number of remarried widows receiving—		Number of widows not remarried at date of inquiry receiving—	
		Total	Number remarried	Number not remarried at date of inquiry	Lump sum	Monthly or weekly installments	Lump sum	Monthly or weekly installments
All ages		182	32	150	7	25	19	131
	Under 1	41	12	29	1	11	3	26
	1–2	66	15	51	4	11	4	47
	2–3	46	4	42	1	3	7	35
	3–4	27	1	26	1		4	22
	4–5	2	0	2			1	1
	5–10	0	0	0				
	10 and over	0	0	0				
Under 20 years		3	3	0		3		
21 years		2	1	1		1		1
22 years		3	2	1		2	1	
23 years		2	2	0	1	1		
24 years		5	1	4	1			4
25 years		7	1	6		1	1	5
26 years		6	1	5	1		1	4
27 years		9	1	8	1		1	7
28 years		6	1	5		1		5
29 years		9	5	4	1	4	1	3
30 years		4	0	4			1	3
31 years		10	2	8	1	1	1	7
32 years		10	5	5	1	4		5
33 years		6	1	5		1		5
34 years		5	0	5			1	4
35 years		6	1	5		1	1	4
36 years		5	0	5			1	4
37 years		10	3	7		3	2	5
38 years		9	0	9			3	6
39 years		11	0	11				11
40 years		6	0	6			1	5
40–45 years		28	1	27		1	3	24
45–50 years		11	0	11				11
50–55 years		6	1	5		1		5
55–60 years		1	0	1				1
60 years and over		2	0	2				2

Report on Workmen's Compensation Administration in New York

IN 1926 the New York Legislature appointed a committee, generally known as the New York State Industrial Survey Commission, to make a general investigation of subjects covering the industrial and economic field, with a view to laying the foundation for a future legislative policy regarding industry. The commission's report, which is summarized in the Labor Review for May, 1927 (pp. 49–52), contained brief discussions of a number of subjects which had been surveyed, but devoted itself mainly to the matter of workmen's compensation.[1] On the whole, it found that the law was working well, but made a variety of recommendations concerning it.

[1] A summary of the second report of the commission is given on p. 46 of this issue.

Before the issuance of this report, charges of fraud in the New York Department of Labor in connection with the administration of workmen's compensation had appeared in the public prints, and these continued to appear for a year or more. These, which according to the papers emanated from the chairman and two members of the industrial survey commission, involved serious accusations against the department. One, for instance, appearing in the Brooklyn Eagle for January 17, 1928, was as follows:

> Hundreds of thousands of dollars are being stolen by employees of the compensation bureau, by doctors, shyster lawyers, and runners. The practice has been going on for years. It amounts to a scandal. Because of the crooked practices which honeycomb the workmen's compensation bureau, not only are the compensation fund and the private insurance companies being mulcted of a great deal of money, but the workmen themselves are suffering.

In view of these charges, Governor Smith, on January 24, 1928, appointed Prof. Lindsay Rogers a commissioner under the Moreland Act "to examine and investigate the administration of the Department of Labor of the State of New York." The investigation was completed and the results submitted to the Governor in two parts, under dates of June 1 and June 15.

Vindication of the Labor Department

PROFESSOR Rogers finds no ground whatever for the charges against the labor department attributed to the members of the industrial survey commission. On this point his findings are summarized as follows:

> 1. The charges of fraud and corruption in the department of labor which had been made in newspaper statements by Senator James S. Truman, Assemblyman Jasper W. Cornaire, and Henry D. Sayre, were withdrawn as soon as my investigation began.
> 2. The evidence before the industrial survey commission in respect of fraudulent compensation claims did not warrant charges that the workmen's compensation law had been corruptly administered.
> 3. The testimony of insurance carriers at my hearings was to the effect that there is a smaller percentage of fraud in workmen's compensation claims than in other forms of insurance.
> 4. No evidence was presented to me indicating the dishonesty or improper conduct of any employee of the department of labor.
> 5. My investigation was as exhaustive as I could make it and failed to uncover any evidence indicating that the compensation law is corruptly administered. I availed myself of every suggestion made to me. No one with a story to tell was denied a hearing. Charges of fraud against the department have not been sustained. The workmen's compensation bureau, so far as its honesty is concerned, comes out of my investigation with a clean bill of health.

Professor Rogers does not of course assert that no fraudulent claims are made nor that all cases of fraud are discovered before payment is made. The industrial survey commission called to his attention 10 fraudulent cases on which the charges of fraud made by its members had been based. He carefully analyzes the evidence in these cases in detail. In 5 of the 10 cases the fraud was detected before any money was paid over; in the other five, the fraudulent claimants succeeded in obtaining payments in no case exceeding $5,000, and the total amount involved was $14,469.

> These cases, totaling $14,469, were the only fraudulent cases considered by the industrial survey commission in which the insurance companies actually paid awards. The accidents in these cases were alleged to have occurred between

April 26, 1924, and October 25, 1926. The total payments of compensation benefits by all carriers for the fiscal year ended June 30, 1925, were $25,669,280; for the year ended June 30, 1926, $26,199,510; for the year ended June 30, 1927, $26,801,366. I leave it to those who are skilled in the use of decimals to calculate the percentage of total payments by insurance carriers represented by these five fraudulent cases.

With 200,000 cases yearly going on the calendars, it is always possible, the report points out, that some may present suspicious features, and charges of wrongdoing are inevitable. The important point is that these charges do not, on investigation, substantiate claims of any extensive corruption or serious loss.

The report stresses the fact that the almost unanimous testimony of representatives of insurance companies was to the effect that there is less perjury in compensation cases than in negligence cases in the courts, and that the compensation losses because of exaggerated claims are less than losses in other forms of insurance.

Recommendations

AS A result of the investigation, Professor Rogers recommends some changes in administration, with a view to making the bureau of workmen's compensation more efficient and permitting the practice of some economies which, because of their initial cost, can not be established under the present plan. These are summarized as follows:

Administration of the bureau of workmen's compensation by the industrial board instead of by the industrial commissioner as at present; payment of the costs of administering the workmen's compensation law by a revolving fund and a quarterly budget instead of by an annual legislative appropriation, and action by the legislature to authorize the Governor to appoint an advisory committee of the workmen's compensation bureau composed of representatives of the insurance carriers.

These recommendations are discussed at some length. The only objection to the first is that a board of five, instead of one man, would exercise the administrative power, which is not regarded as a serious difficulty. The advisory committee would help to establish more direct relations between the insurance carriers and the administration, thus avoiding sources of trouble which have arisen in the past from the attitude of the industrial commissioner. The establishment of the revolving fund and the quarterly budget would not involve any extra expense to the State, since the cost of administering the law is met by assessments levied on the insurance carriers. Emphasis is laid, however, on the necessity for adopting all three of the recommendations, since no one by itself is adequate to the needs of the situation.

Unemployment Insurance in the New York Clothing Industry [1]

IN LINE with the agreements entered into between the Amalgamated Clothing Workers of America and the employers' associations in Chicago and in Rochester, N. Y., which provide for insurance of members of the union against unemployment,[2] the New York Clothing Manufacturers' Exchange has concluded an agreement

[1] The Advance, New York City, June 29, 1928, p. 5, July 20, 1928, p. 8.
[2] See Labor Review, July, 1928, pp. 56, 57.

with the members of the union by which the benefits of unemployment insurance are extended to the New York clothing market.

The agreement, which governs wages and working conditions, became effective June 30, 1928, and lasts until June 30, 1931. Unlike the Chicago and Rochester agreements, the employees are not required to contribute to the unemployment insurance fund, but it is to be maintained by a weekly contribution by the employers amounting to 1½ per cent of the total labor cost of all clothing manufactured for them whether in their own inside shops or in contract shops making up work for them. By labor cost is meant the total weekly pay roll in both inside and contract shops. The payments by the employers are to begin September 1, 1928, and the fund is to be under the management of a board of trustees consisting of a chairman and an equal number of representatives of the employers and the union. The impartial chairman of the clothing industry in New York will serve as chairman of the board of trustees. The number of trustees may be changed from time to time by joint action of the Manufacturers' Exchange and the union, but there may not at any time be less than three nor more than seven trustees. No benefits will be paid during the first year, but the money collected during that period will be used to establish a reserve from which unemployment benefits will be paid after September 1, 1929.

Recent Workmen's Compensation Reports

Maryland

THE State Industrial Accident Commission of Maryland, in its annual report for the year November 1, 1926, to October 31, 1927, presents some interesting statistics concerning industrial accidents in that State. Out of the total claims allowed under the workmen's compensation act, 13,769 were temporary total, 645 were permanent partial, 2 were permanent total, and 105 were fatal cases. There were 542 claims disallowed, 14 withdrawn and dismissed, and 245 pending at the end of the period. Summaries of some of the tables are found below:

TABLE 1.—NUMBER OF COMPENSATION CLAIMS ALLOWED, BY INDUSTRY

Industry	Temporary total	Permanent partial	Fatal
Agriculture	35	2	
Mining, metallurgy and quarrying	763	22	8
Other extractive industries	108	3	1
Manufacturing	6,922	387	49
Construction [1]	2,755	112	21
Transportation and public utilities	2,009	74	17
Trade	576	19	1
Clerical and professional service	161	4	1
Miscellaneous industries	165	5	1
Department of State, cities and counties of Maryland [1]	275	17	6
Total [2]	13,769	645	105

[1] Permanent total, 1.

[2] Permanent total, 2.

TABLE 2.—NUMBER OF COMPENSATION CLAIMS ALLOWED, BY SOURCE OF INJURY

Source of injury	Temporary total	Permanent partial	Fatal
Mechanical			
Prime movers	254	10	2
Power transmission apparatus	9	2	3
Power working machinery	46	8	
Metal working machinery	554	116	1
Woodworking machinery	249	66	
Leather working machinery (tanneries)	2		
Leather products machinery	45	3	
Paper making machinery	23	2	1
Paper products machinery	76	19	
Textile machinery	160	8	
Laundry machinery	21	3	1
Food products machinery	134	34	1
Chemical products machinery	54	6	2
Mining and ore refinining machinery	17	2	
Hoisting apparatus	160	21	4
Construction machinery	46	1	1
Excavating machinery	23	3	1
Special machinery	19	7	
Farming	5	2	
Office machinery	1	1	
Silver making machinery		1	
Total	1,898	315	17
Nonmechanical			
Vehicles (not including construction of)	1,747	67	27
Pressure equipment	65	1	
Explosive substances	48	4	6
Electricity	31		2
Conflagrations and flames	84	2	4
Hot substances	372	1	2
List of substances	702	17	1
Falls of persons [1]	1,314	30	22
Falling objects [1]	1,603	32	16
Handling objects	2,293	44	2
Hand tools	1,004	58	1
Miscellaneous	954	33	4
Stepping on objects	694	3	
Striking against objects	634	18	
Struck by objects	326	20	1
Total [2]	11,871	330	88
Grand total [2]	13,769	645	105

[1] Permanent total, 1.

[2] Permanent total, 2.

Porto Rico

THE twelfth annual report of the Bureau of Labor to the Legislative Assembly of Porto Rico, dated March 21, 1928, contains comments and recommendations on the subject of workmen's compensation which were in part responsible for the passage of a new workmen's compensation law at the 1928 session of the Porto Rican Legislature. Because the report presents a simple and direct statement of the situation existing in Porto Rico at the beginning of the year, that part concerning workmen's compensation is quoted in full as follows:

> The failure of workmen's relief legislation in Porto Rico, as predicted in previous reports, has gone beyond the limit of all calculation and has stamped on all of us the mark of indifference to the misfortunes of others. That is the common belief throughout the island and only words of indignation against the workmen's relief commission are heard everywhere.
>
> The blame for this failure, however, should not be placed upon the Legislature of Porto Rico, but solely on the commission in charge of the administration of the State insurance fund and on those employers, large and small, that have refused to pay their premiums.

This commission, in a resolution adopted on December 30, 1927, protesting against bill No. 754 of the Senate of the United States, introduced by Senator Bingham, recognizes its failure and declares itself powerless to act in favor of the injured workers. Said resolution reads thus:

"The unlimited granting of 'injunctions' to corporations caused serious financial difficulties to the government of Porto Rico; it made it powerless to render important public services and brought upon it considerable discredit. These 'injunctions' are responsible for the difficult situation confronted by this branch of the government, which is unable to pay regularly thousands of filed in claims, thus virtually rendering uneffective so human a law of compensation, with the enforcement of which we are charged and whose original purpose was to protect workmen and fair-minded employers. By means of 'injunctions' these great corporations have succeeded in the past in violating the law and evading the paying of the premiums legally levied on them, condemning to misery and starvation, on account of our impossibility to pay their compensations, hundreds of widows and children, and men permanently disabled, totally or partially, while stockholders of said corporations have received millions of dollars as dividends on their investments. The legislative assembly shall have to provide more than one million dollars for the payment of claims pending, and small employers, too, will have to pay all what those large corporations did not pay through 'injunctions.' "

This is not the moment to make any concrete charges of a personal character. The harm has already been done and what interests disabled workers or their widows and heirs now is the adoption, to save them from starving, of those measures that will provide for the payment of their claims.

In our opinion, the law needs no more amendments than those making for clarity in the procedure of collecting the premiums levied on employers, as well as authorizing injured workers, or their heirs, to secure, judicially, a reasonable compensation. If to this is added a provision making the insular government the model of employers by paying in advance a sufficient sum to cover all the compensations for accidents that may occur to public workers, and the provision that the expenses for the administration of the insurance fund be included in the general budget of the island, the causes of the failure of our workmen's relief act will be removed and we shall have a legislation superior to that existing in other civilized countries.

We do not favor the establishing of the competitive fund system in Porto Rico, and we shall keep opposing it until the economic situation of our wage-earning classes improves and makes of each worker his own lawyer. The competitive fund system would furnish an opportunity to unscrupulous agents to exploit, irrespective of government intervention, the defenseless workers.

This law, adopted for the benefit of workmen and employers, has not failed because of defects of form or construction, though the procedure has been very intricate and incomprehensible. Even without the amendments suggested in the foregoing paragraph, it could have given satisfactory results.

Our legislature, as well as employers and workers, knows that the failure of this law is largely due to the lack of capable personnel with enough vocational disposition to interpret and strictly enforce it more in accord with its spirit than with its word.

We think it is time to act. It would be easy for the government to recover the lost confidence of employers who have paid their premiums in due time but whose workers have not received the expected help in the hour of misfortune. If this confidence is to be restored, all those claims pending should be paid at once.

The need of a special accident prevention law, that is, a law providing for the installation of safety appliances in working shops, factories, and other places where workers are employed is obvious. By this means the number of compensations applied for will be considerably reduced.

The new workmen's compensation act (No. 85 of the Laws of 1928) approved May 14, 1928, becomes effective on August 12, 1928, and supersedes the act of 1918. Many important provisions in the old law are found in the 1928 act. Several very important changes have been made, the most important of which has been the replacing of the compulsory exclusive State fund insurance system by the direct liability of the employer for compensation, with a provision requiring

that the payment of awards be assured through insurance in private or mutual insurance companies or in the State fund, or the deposit of bonds or other securities in the case of self-insurers. Among the less important changes made by the passage of the 1928 act were the covering of employees whose wages exceed $1,500 a year, the reduction of the maximum payment from $4,000 to $3,000 in the case of death and total permanent disability, and particularly the provisions intended to secure better administration of the law by giving the superintendent of insurance greater authority by providing for expediting a decision by the industrial commission through mandamus proceedings in case of unjustifiable delay, by eliminating the time limit within which to file a claim, by reducing the time within which an appeal from an award must be taken from 30 to 10 days, by doing away with the right of appeal from the district court to the Supreme Court, and by increasing penalties. By separate enactment a board of five members was created to liquidate the workmen's relief trust fund and the workmen's relief commission was continued for certain purposes incidental to the liquidation of the trust fund.

Report of Canadian Parliamentary Committee on Insurance Against Unemployment, Sickness, and Invalidity

THE FINAL report of a committee appointed by the Canadian House of Commons to consider the question of unemployment insurance was presented to the Canadian Parliament during the session of 1928.[1] As a result of the hearings held by the committee, in which witnesses appeared on behalf of organized labor, public welfare associations, and the Canadian Manufacturers' Association, the conclusion was reached that some method of unemployment insurance will unquestionably have to be provided before long as a solution, in part, of the industrial problems of the present time.

The principle of unemployment insurance based on compulsory contributions by the State, the employers, and the employees was accepted and indorsed by the committee, which pointed out that a similar conclusion was reached by a commission appointed to consider this subject in 1919.

The responsibility for legislation on unemployment insurance rests with each Province, but it is within the power of Parliament to grant subsidies to those Provinces which adopt such legislation; and as the conditions of unemployment vary so greatly between the different Provinces, it was stated to be very desirable for the success of any plan of unemployment insurance that several of the Provinces should be willing to act simultaneously. The committee recommended, therefore, that the matter should be referred to the various Provinces with a view to finding out which ones would be prepared to take up the question and also the character of the proposed legislation.

Lack of data on the extent of unemployment rendered it difficult for the committee to estimate the cost of an unemployment insurance scheme, and it was recommended, therefore, that the Government should immediately take under consideration some method by which

[1] Canada. House of Commons. Select standing committee on industrial and international relations. Minutes of proceedings and evidence and final report. Ottawa, 1928. (No. 14—May 15, 1928.)

the amount of unemployment could be measured. Finally it was recommended that Parliament at the next session should again refer the question to the committee on industrial and international relations.

Old Age Pensions Act of South Africa

MENTION was made in the Labor Review for August, 1928 (p. 86), that the Government of South Africa had adopted a plan establishing noncontributory pensions for the aged, details of the plan not being then available. The South African official publication, the Social and Industrial Review, in its issue for July, 1928 (p. 533), announcing that the act was gazetted early in June and will come into force January 1, 1929, gives a summary of its terms.

The act provides that every white person and every colored person shall be entitled to receive an old-age pension when he or she attains the age of 65 years, provided such person is domiciled in the Union, is a British subject and has been resident in the Union for 15 years out of the 20 years immediately preceding the date of his or her application for a pension. Marriage with an alien does not disqualify a woman from receiving a pension, if she was otherwise qualified under the act.

Pensions are limited to those whose annual earnings or income do not exceed £51 in the case of whites and £33 in the case of colored. For a white person whose income is from £48 to £51, a pension of £3 is allowed, which increases as the applicant's own means diminish until the pension reaches £30 for those whose yearly income is £24 or less; for the colored the range of the pension is from £3 for those with incomes of over £30 up to £33, to £18 for those whose income is £18 or under. In calculating the income, all property and assets capable of investment or profitable use are taken into account as well as earnings and income from investments, while gifts, funeral or sale benefits and furniture and personal effects are not included.

In calculating the means of a married man, who is living with his wife in the same house, his income shall be taken to be half their total means, and in the case of joint ownership of property, each spouse shall be deemed to be entitled to half that property. The act provides against any person depriving himself of any income or property in order to qualify himself for a higher pension.

The act is to be administered by a commissioner of pensions, who is empowered to discontinue a pension or reduce its rate if, after investigation, he finds reason for doing so. If a pensioner leaves the Union for more than 60 days his pension is to be discontinued unless he is in a country with which reciprocal arrangements have been made. Naturally, no such arrangements have yet been made, but the provision for them is an interesting feature of the plan.

If provision is made by law in any country outside the Union for the establishment of an old-age pensions scheme substantially corresponding to the Union scheme, reciprocal arrangements may be made with the authority administering the foreign scheme, whereby residence in the one country shall, for the purpose of qualification for pension in the other country, be treated as residence in that other country and pensions payable in the one country will then be payable to persons while resident in the other country.

HOUSING

French Law Providing for the Construction of Cheap Dwellings for Workingmen

A REPORT from Myron T. Herrick, the American Ambassador to France, dated July 13, 1928, gives the important features of the law passed by the French Parliament, July 9, which makes provision for the construction during the five-year period, 1928–1933, of 200,000 dwellings at a total cost of 7,000,000,000 francs, to be offered for sale at low prices, and of 60,000 dwellings at a total cost of 4,200,000,000 francs, for lease at average rentals. The bill was passed by a unanimous vote in both the Senate and Chamber of Deputies, with very little debate in either House.

The housing shortage, which has reached the proportions of a crisis, has been one of the postwar developments in France, due largely to the financial uncertainty caused by a fluctuating currency and the primary necessity for rebuilding the devastated areas. Other factors in the shortage of dwellings have been the movement of the rural population to the cities, the influx of foreigners, increase in the number of marriages, and the decline in building operations, the latter being caused by excessive costs owing to the high rate of interest charged. Before the war, construction loans could be obtained at about 5 per cent but during the past three years the interest on such loans has been as high as 12 per cent. The practical completion of the reconstruction program and the stabilization of the franc have removed the obstacles, however, to the large-scale building program which the country needs and under the plan provided for in the law the money will be loaned at a much lower rate of interest.

The law provides for the following method of financing the scheme during the first year, which may be modified as it may be found necessary during the remaining years of the plan. A fund of 1,400,000,000 francs is to be created, of which the State will subscribe 150,000,000 francs, the Government Deposit and Consignment Office (*Caisse de Dépôts et Consignations*) 700,000,000 francs which will be loaned for building operations at an interest rate of 2 per cent, and the remainder will be secured from private individuals and building and loan associations, the State contributing toward the payment of interest charges on these loans. With this annual working capital the plan calls for the erection of 50,000 houses the first year, at an average cost of 35,000 francs each.

The annual expenditure during the five-year period for the construction of dwellings for lease at average rentals will amount to 840,000,000 francs of which 300,000,000 francs will be loaned by the Caisse de Dépôts et Consignations, 168,000,000 francs by private construction companies, and the balance by the departments, communes, and building and loan associations, the State contributing toward the interest charges on these loans.

It is part of the Government's plan to meet some of its obligations under the act through the utilization of deliveries in kind from Germany, and materials so utilized will be exempt from the duty now charged on imported goods of German origin. Certain tax exemptions, such as remission of the 12 per cent tax on property sales, will also be allowed to those erecting houses under the program.

LABOR CONFERENCES

Eleventh International Labor Conference [1]

THE eleventh session of the International Labor Conference was held in Geneva from May 30 to June 16, 1927, with delegations present from 45 countries.

The agenda of the conference comprised two items—minimum wage-fixing machinery and prevention of industrial accidents, including accidents due to couplings on railroads. The first item was up for final discussion and action as it was introduced in the preceding session of the conference, while the question of the prevention of industrial accidents was on the agenda for the first time. It was unanimously decided by the conference to continue the study of this question, and to place this subject on the agenda of the twelfth conference.

A draft convention providing for the creation or maintenance of machinery for the establishment of minimum rates of wages in certain trades or parts of trades in which no arrangements exist for the effective regulation of wages by collective agreement or otherwise and in which wages are exceptionally low was adopted by the conference, as was also a draft recommendation which called attention to certain general principles relative to wage fixing which are based on present practice and experience and which produce the most satisfactory results.

Other resolutions passed by the conference included one on calendar reform, which provided that the International Labor Office should ascertain the views of the labor organizations in the various countries on this subject; one on the advisability of the various Governments notifying the International Labor Office from time to time of the situation in their countries in regard to the recommendations or conventions presented to them for ratification; and a final resolution advocating the establishment of labor departments in countries which do not now have such an organization.

Resolutions Passed at International Miners' Congress [2]

THE following resolutions were unanimously adopted at the Twenty-eighth International Miners' Congress, which was in session at Nimes, France, May 28 to 31, 1928:

The coal problem

This congress, having heard the discussion on the coal problem, demands that the International Labor Office and the Economic Organization of the League of Nations shall call a world conference of coal-producing countries and that the International Committee of Mine-Workers shall prepare a case and secure representation with equal rights to put the miners' case concerning the whole subject.

[1] International Labor Office. Industrial and Labor Information, Geneva, May 28, June 4, and June 25, 1928.

[2] International Labor Office. Industrial and Labor Information, Geneva, June 18, 1928, pp. 439, 440.

Uniformity of hours of labor

The congress, considering it highly desirable that hours of labor in the coal industries of the different nations should be equalized at seven hours a day, including winding times, in accordance with the general lines of its previous resolutions,

Requests the governing body of the International Labor Office to call a special conference of coal-producing States to achieve this aim.

Ratification of the Washington hours convention

Whereas the Twenty-eighth Miners' International Congress deems it necessary to see the different Governments ratify the Washington convention, fixing the working-day at 8 hours and a week at 48 hours in all,

Whereas all the congresses of the miners' international since its foundation have pronounced in favor of the 8-hour principle,

Whereas Section XIII of the Versailles treaty, which put an end to the international slaughter caused by the 1914–1918 war, proclaimed the right of the workers to a better existence and considered that the 8-hour day was the first of the reforms to be carried out in their favor,

Considering the attitude taken by the delegates of the British Government at the thirty-eighth session of the governing body of the International Labor Office asking for a revision of the Washington convention concerning the 8-hour day,

Whereas this proposition is a retrogression from the great conquest of the working-classes throughout the world:

The congress unanimously protests against the attitude of the British Government responsible for this unseasonable reactionary policy, and

Calls upon the miners' organizations of the countries which have not yet ratified the Washington convention to start an active campaign in support of said ratification, and to use the most energetic means to have this reform carried through within a period of two years at the most.

Miners' pensions

The congress authorizes the executive committee to draw up a program in respect of pensions for miners. The committee shall, before August 1, 1928, collect all information useful for that purpose from the different countries where a pension system exists. This program shall, after having been approved by the national sections, serve as a guide for all affiliated countries.

Social insurance

The International Miners' Federation recalls the fact that it demands a system of social insurance against sickness, invalidity, unemployment, etc., and requests the different national sections to send to the international secretary before October 1, 1928, any useful information on the legislation obtaining in this matter in their respective countries.

International organization

The congress recognizes the necessity for the maintenance of a powerful miners' international embracing the miners' organizations of all countries, and authorizes the executive to continue its efforts toward the development of such an international.

All miners' organizations accepting its statutes, its principles, and its decisions, may be affiliated to the International Federation.

In favor of peace

The congress urges the intensification of general propaganda in favor of peace; that this propaganda should be aimed at the causes of war and in favor of the action of the League of Nations; that this international organism may rely on the workers to beat down resistance from wherever it may emanate.

WORKERS' EDUCATION AND TRAINING

Apprenticeship and Industrial Training in England

THE Labor Review in its issues for April (pp. 93, 94) and August (p. 98) of this year contained discussions of the partial reports made from time to time by the committee appointed to inquire into apprenticeship and training in the skilled occupations in Great Britain and Northern Ireland. The committee has now finished its work and issued its general report, summing up the findings on the various industries given in the preceding volumes. The Ministry of Labor Gazette (London) gives a summary of this final volume in its issue for July, 1928 (p. 241).

The inquiry, which was made during 1925 and 1926, was carried on mainly by questionnaires, supplemented by information obtained from employers' associations, trade-unions, and other sources. Questionnaires were sent to 44,000 employers. Nearly three-fourths of these, employing around 3,000,000 people, gave the information desired respecting 137,331 male and 41,530 female apprentices and learners. The term "apprentice" is used throughout the report to mean a worker who has a contractual relation with his employer, under which the employer is bound to teach him a given trade, while the worker is bound to serve for an agreed period on stated terms. A "learner" is one who, "not being an apprentice, is specifically engaged by the employer for a recognized period of training in the capacity of a learner, and is provided by the employer with instruction, or with definite facilities for learning a branch or process of the industry." In the cotton and wool textile industries, however, "learner" means a juvenile who is undergoing a short but variable period of intensive training, or who is acting as a helper while waiting for a vacancy at a machine, not necessarily in the same department.

It is estimated that there are some 315,000 boy apprentices and 110,000 boy learners (excluding learners in the textile industries) in Great Britain alone; in other words, nearly one-seventh of the male workpeople in industrial occupations in Great Britain under 21 years of age are apprentices, and, excluding the textile industries, about one-fifth are either apprentices or are employed under some form of training adopted in substitution for or as an alternative to apprenticeship.

Considering only the industries in which apprenticeship is found, about one-fourth of the employers take apprentices, and about 30 per cent employ boys under some recognized form of training. The smaller firms are bearing more of the burden of training apprentices, in relation to their size, than are the larger. Apprenticeship is still the recognized form of recruiting for the skilled occupations but certain qualifications are attached to this generalization.

In those industries in which great specialization of process and of product has become possible, the advance made in the perfection of mechanical methods

and in the use of machine tools has had the effect of introducing what might almost be described as a new class of worker, the minders of automatic or semi-automatic machines. Many of these machine minders are trained to a certain degree of skill by means of a rather vague and indefinite system of "learnership," or by a simple process of upgrading. "Upgrading" is the process of promoting, usually to the semiskilled or the less skilled tasks, laborers, or other unskilled operatives, who have acquired some knowledge of the methods and processes in use by working in association with skilled men. It takes two main forms: Either a young laborer is first placed on a simple machine, and his progression to more difficult machines depends on his own adaptability; or a laborer works with a skilled workman, sometimes as a mate or as a member of a group or gang; he naturally acquires some acquaintance with the skilled operations, and after some years' experience may be able to perform some of these operations himself.

Certain changes are taking place in apprenticeship itself. One of these is a growing tendency to substitute an oral agreement for an indenture or other written contract, and another is a change in the age of entering apprenticeship and in its duration. The traditional period was seven years, running from the age of 14; this has very largely given place to a period of five years, beginning at 16. "Of the 74,500 boys who each year enter upon some definite form of industrial training, about 27,000 start at the age of 14; 15,000 at the age of 15; and 30,000 at the age of 16." There are changes also in the methods of selecting and training apprentices. The commonest method of selection is still that of choice by the employer or foreman on the basis of recommendations or preliminary trial, but to some extent methods of determining the choice by considerations of industrial fitness are being introduced. Similarly, the time-honored method of training by attaching the apprentice to a skilled workman who is made responsible for his instruction is still by far the most common, but employers are introducing carefully planned courses of training to give opportunities for progressive advancement in knowledge and skill. A greater regard for the advantages of technical education is a feature of these schemes, and wherever practicable employers tend to stress this point.

Thus, substantial proportions of employers with apprentices pay or refund class fees to those apprentices who produce a record of satisfactory attendance at evening classes, or grant time off during working hours, usually without deduction of wages, in order that the apprentices may attend evening or part-time day classes; or they provide facilities for attendance at day technical classes, by releasing the apprentice for one or two days per week for this purpose. So also many employers encourage attendance at evening classes by giving extra pay or bonus, according to success attained in technical classes. Some employers make attendance at evening classes a condition of the apprenticeship agreement; some arrange for technical instruction to be given at classes held in the work; while others adopt the "sandwich" system, under which boys are allowed to spend alternate periods in the works and in attendance at technical schools or colleges or universities. Despite all that is being done in this direction, however, there is evidence in the returns that in some districts facilities for technical instruction are not available. Even where such classes are available, there is room for the establishment of a closer relationship between technical and workshop training; thus, for example, under existing arrangements it is the exception rather than the rule for any distinction to be made in the length of the period of training required to be served by those apprentices who attend for technical instruction and those who do not.

The report gives a summary of the main characteristics and objects of the trade-union rules relating to the conditions of apprenticeship, and also contains an account of collective agreements between

employers' associations and trade-unions relating to apprenticeship, and of its historical development and legal aspects.

A section of the report is devoted to an attempt to estimate how far the supply of apprentices is sufficient to meet the future needs of industry. This, it is pointed out, is a problem of unusual complexity. The difficulties of the subject are enhanced by the defects of the available information respecting the relative numbers of apprentices and journeymen, and of juniors and adults, who have in the past entered a particular occupation, and by the uncertainty respecting the future course of any particular industry. The complication introduced by the declining birth rate is also discussed. The report attempts, however, on the basis of the census and other figures, to frame an estimate of the proportion of apprentices (or learners) to journeymen necessary to maintain the existing number of journeymen in the building, engineering and shipbuilding, printing, and furniture trades.

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INDUSTRIAL DISPUTES

Strikes and Lockouts in the United States in July, 1928

DATA regarding industrial disputes in the United States for July, 1928, with comparable data for preceding months, are presented below. Disputes involving fewer than six workers and lasting less than one day have been omitted.

The bureau is dependent upon trade journals, newspapers, and labor periodicals for notices of strikes. These reports are followed up by correspondence and when necessary by personal visits of representatives of the Conciliation Service or of this bureau.

Table 1 is a summary table showing for each of 14 months—June, 1927, to July, 1928, inclusive—the number of disputes which began in those months, the number in effect at the end of each month, and the number of workers involved. It also shows, in the last column, the economic loss (in man-days) involved. The number of workdays lost is computed by multiplying the number of workers affected in each dispute by the length of the dispute measured in working-days as normally worked by the industry or trade in question. It is to be noted that the figures given include only those disputes which have been verified by the bureau.

TABLE 1.—INDUSTRIAL DISPUTES BEGINNING IN AND IN EFFECT AT END OF EACH MONTH, JANUARY, 1927, TO JULY, 1928

Month and year	Number of disputes—		Number of workers involved in disputes—		Number of man-days lost during month
	Beginning in month	In effect at end of month	Beginning in month	In effect at end of month	
January, 1927	37	18	5,915	2,287	58,125
February, 1927	65	45	9,756	5,717	115,229
March, 1927	74	67	13,142	8,182	214,283
April, 1927	87	88	202,406	199,701	5,265,420
May, 1927	107	116	22,245	200,702	5,136,006
June, 1927	80	88	18,957	196,323	4,863,345
July, 1927	65	63	33,994	199,287	5,308,123
August, 1927	57	53	8,150	198,444	4,999,751
September, 1927	57	58	12,282	196,829	4,945,702
October, 1927	50	58	13,024	82,095	2,724,117
November, 1927	27	51	5,282	82,607	2,040,140
December, 1927	28	54	4,281	81,229	2,129,153
January, 1928	43	62	18,263	81,676	2,135,092
February, 1928	47	61	33,602	104,883	2,155,559
March, 1928	34	63	7,145	78,362	2,343,415
April, 1928	62	70	143,834	134,382	4,884,430
May, 1928	72	74	15,138	136,094	3,526,608
June, 1928 [1]	39	68	21,457	134,963	3,586,110
July, 1928 [1]	42	67	15,640	134,49[illegible]	3,368,219

[1] Preliminary figures subject to revision.

Occurrence of Industrial Disputes, by Industries

TABLE 2 gives by industry the number of strikes beginning in May June, and July, 1928, and the number of workers directly involved:

TABLE 2.—INDUSTRIAL DISPUTES BEGINNING IN MAY, JUNE, AND JULY, 1928

Industry	Number of disputes beginning in—			Number of workers involved in disputes beginning in—		
	May	June	July	May	June	July
Auto, carriage, and wagon workers			1			52
Bakers	4		1	123		7
Barbers	3	3	1	284	678	500
Brewery and soft drink workers	1			8		
Building trades	28	9	6	4,748	4,280	188
Chauffeurs and teamsters	3		1	227		22
Clothing workers	3	6	11	154	8,174	1,672
Fishermen	1			150		
Furniture workers	4			99		
Hotel and restaurant employees	1	1	1	45	200	20
Leather	2			74		
Lumber and timber workers	2	1		38	40	
Metal trades	1	2	1	87	294	12
Miners	9	5	8	5,963	2,122	12,273
Motion picture and theater workers			1			17
Oil and chemical workers	1			1,479		
Paper and paper goods	1			101		
Printing and publishing	1		1	13		60
Stone workers	1			30		
Shipbuilding			1			500
Street railway employees		1			116	
Textile workers	3	6	3	315	791	225
Miscellaneous	3	5	5	1,200	4,762	92
Total	72	39	42	15,138	21,457	15,640

Size and Duration of Industrial Disputes, by Industries

TABLE 3 gives the number of industrial disputes beginning in July, classified by number of workers and by industries:

TABLE 3.—NUMBER OF INDUSTRIAL DISPUTES BEGINNING IN JULY, 1928, CLASSIFIED BY NUMBER OF WORKERS AND BY INDUSTRIES

Industry	Number of disputes beginning in July, 1928, involving—					
	6 and under 20 workers	20 and under 100 workers	100 and under 500 workers	500 and under 1,000 workers	1,000 and under 5,000 workers	5,000 workers and over
Auto, carriage, and wagon workers		1				
Bakers	1					
Barbers				1		
Building trades	3	2	1			
Chauffeurs and teamsters		1				
Clothing workers	3	6	1		1	
Hotel and restaurant employees		1				
Metal trades	1					
Mine workers		1	2		4	1
Motion-picture and theater workers	1					
Printing and publishing workers		1				
Shipbuilding				1		
Textile workers	1	1	1			
Miscellaneous	2	3				
Total	12	17	5	2	5	1

In Table 4 are shown the number of industrial disputes ending in July, by industries and classified duration:

TABLE 4.—NUMBER OF INDUSTRIAL DISPUTES ENDING IN JULY, 1928, BY INDUSTRIES AND CLASSIFIED DURATION

Industry	Classified duration of strikes ending in July, 1928					
	One-half month or less	Over one-half and less than 1 month	1 month and less than 2 months	2 months and less than 3 months	3 months and less than 4 months	4 months and less than 5 months
Auto, carriage, and wagon workers	1					
Barbers	2					
Building trades	3	1	4			
Chauffeurs and teamsters	1					
Clothing workers	6		1			
Furniture workers				1		
Metal trades	1					
Mine workers	8					1
Motion picture and theater workers, etc.	1					
Shipbuilding	1					
Textile workers	2	2		1		
Miscellaneous	5		1			
Total	31	3	6	2		1

Principal Strikes and Lockouts Beginning in July, 1928

ANTHRACITE coal miners, Pennsylvania.—Operations of the Lehigh Coal & Navigation Co.'s collieries in the Panther Creek Valley were tied up from July 5 to 9 by an unsuccessful and "illegal" strike of 5,214 miners. The strike was in protest against suspension by the company, as an economy measure, of certain operations during the slack season through July.

The miners demanded that the company divide the working time of the miners at the affected mines among the other collieries, if the management was unable to sell the full output of the mines. The company appealed to the men to return to work and observe the spirit of the agreement which binds the United Mine Workers with the Anthracite Operators' Association.

The district president of the United Mine Workers upheld the coal company's stand not to meet with grievance committees of the strikers while an illegal walkout was in progresss and ordered the men to return to work.

Collar makers, New York.—Cluett, Peabody & Co., collar manufacturers, Troy, N. Y., were affected by a strike of approximately 1,000 of their employees from July 9 to July 12, because of a temporary disagreement as to the method or rate of pay. For economic reasons the company undertook to make a necessary rate adjustment and felt that the so-called Bedeaux system was the best plan to use for this purpose, but the employees objected, fearing that the new system, which involved the payment of a basic rate for a specified number of collars and an additional "bonus" rate for all collars produced beyond the specified number per day would in effect mean a wage cut. However, they agreed to the rate adjustment by the company, but requested that the straight piece-rate system be retained, and this was done. The suspension was unusual in that the employees, although reporting at the plant each day, refrained from working.

Anthracite coal miners, Pennsylvania.—Demanding that an assistant foreman be discharged for an alleged assault on a motorman during an argument, 2,010 employees of the Susquehanna Collieries Co. unsuccessfully struck from July 11 to July 14. They returned to work pending further consideration of the grievance with the district officers.

Maxwell Colliery No. 20, of the Lehigh & Wilkes-Barre Coal Co., was reported as involved in an unsuccessful strike of 1,467 miners from July 11 to July 24, because of working conditions affecting 36 men, two of whom refused to be shifted from work "on a consideration basis" to other employment on the "contract basis."

Principal Strikes and Lockouts Continuing into July, 1928

TEXTILE operatives, Massachusetts.—The strike of textile workers in New Bedford, which began April 16, continues.

On August 8 the State board of conciliation and arbitration, in accordance with previous notice, began an investigation to determine the responsibility for the strike. This action followed the rejection by both sides of the board's recommendation for arbitration. Hearings were concluded on August 9. A report of the board's findings is expected to be rendered at a later date.

Bituminous coal strikes.—Since the withdrawal on July 18 by the United Mine Workers of their demand for the Jacksonville scale as a basis for wage negotiations, conferences between operators and union officials have taken place in several of the affected States with a view to reaching a wage-scale agreement.

The Central Ohio Coal Operators' Association and the Ohio United Mine Workers effected a wage agreement on August 23 on the basis of $5 per day and 70 cents per ton for cutting and loading. About 14 mines, employing 3,000 to 3,500 union miners, are, it is said, immediately affected. The agreement dates from September 1, 1928, and terminates March 31, 1930.

A contract similar to the foregoing is reported to have been consummated on August 24, at Kansas City, between mine workers' representatives and officials of the Southwestern Coal Operators' Association.

These conferences also appear to give promise of success in Illinois and Indiana, where the strike was reported as over by April 30, but, as previously explained, many of the mines in these States have remained idle because of the slack demand for coal or because the operators were unwilling to operate under the Jacksonville scale.

Conciliation Work of the Department of Labor in July, 1928

By HUGH L. KERWIN, DIRECTOR OF CONCILIATION

THE Secretary of Labor, through the Conciliation Service, exercised his good offices in connection with 39 labor disputes during July, 1928. These disputes affected a known total of 59,642 employees. The table following shows the name and location of the establishment or industry in which the dispute occurred, the nature of the dispute (whether strike or lockout or controversy not having reached the strike or lockout stage), the craft or trade concerned, the cause of the dispute, its present status, the terms of settlement, the date of beginning and ending, and the number of workers directly and indirectly involved.

On August 1, 1928, there were 45 strikes before the department for settlement and in addition 15 controversies which had not reached the strike stage. The total number of cases pending was 60.

LABOR DISPUTES HANDLED BY THE UNITED STATES DEPARTMENT OF LABOR THROUGH ITS CONCILIATION SERVICE, JULY, 1928

Company or industry and location	Nature of controversy	Craftsmen concerned	Cause of dispute	Present status and terms of settlement	Duration		Workers involved	
					Beginning	Ending	Directly	Indirectly
Flashlight Sign Co., Chicago, Ill.	Strike	Electrical and sheet-metal workers.	Jurisdiction of metal work	Adjusted. No change in jurisdiction	1928 July 2	1928 July 18	5	25
Grand Tunnel, West Nanticoke, Pa.	do	Miners	Working conditions	Pending	(1)		(1)	
Barbers, Philadelphia, Pa.	Threatened strike.	Barbers	Proposed cut from to $32.50 per week; barbers asked $35 per week.	Adjusted. Renewed last year's agreement without change.	July 11	July 14	700	
American Lamp & Shade Co., Chicago, Ill.	Strike	Lamp and shade makers.	Asked union wage	Adjusted. Allowed union scale, $1.10 per hour; $1.25 per hour for piece work.	May 8	July 3	25	5
Dunbar Musical Comedy Co., Louisville, Ky.	do	Musicians	Company failed to pay wages.	Unclassified. Company disbanded	July 9	July 15	8	42
Do	do	Stage hands	do	do	do	do	9	41
WAIU Radio Station, Columbus, Ohio.	Controversy	Electrical workers	(1)	Pending	July 12		3	
No-Equal Hosiery Co., Reading, Pa.	Strike	Hosiery workers	Discharge of 2 members	do	July 10		70	125
Lehigh Coal & Navigation Co., Panther Creek Valley, and Hazleton, Pa.	do	Miners	Working conditions	Adjusted. Returned; case to go through proper channels.	July 5	July 9	5,214	
Hudson Coal Co., Olyphant, Pa.	do	do	Union dues dispute	Unclassified. Men voted to return to work.	June 26	June 27	189	
Susquehanna Coal Co., Nanticoke, Pa.	do	do	Working conditions	Adjusted. Returned; dispute to go through proper channels.	July 11	July 14	2,010	
Lehigh & Wilkes-Barre Coal Co., Ashley, Pa.	do	do	Discharges	do	do	July 24	1,500	
Court House Building, Uniontown, Pa.	do	Painters and carpenters.	Wage dispute	Pending. Nothing can be done at present.	July 15		(1)	
Brayer Bros. Construction Co., Buffalo, N. Y.	do	Asphalt-paving workers.	Asked 10 cents per hour increase—90 cents per hour for 8-hour day.	Adjusted. Allowed as asked	July 11	July 19	35	180
Burgard Construction Co., Buffalo, N. Y.	do	do	do	do	July 10	do	35	200
Asphalt Rock Co., Buffalo, N. Y.	do	do	do	do	July 11	do	30	200
Venango Theater, Oil City, Pa.	Controversy	Musicians	Leader of orchestra laid off	Adjusted. Reinstated according to contract.	July 10	July 16	8	4
Painters, White Plains, N. Y.	Strike	Painters	Renewal of agreement	Unclassified. Allowed $12 per day, 40-hour (5-day) week, and 10 cents instead of 20 for carfare.	July 2	July 6	145	

American Insurance Union, Columbus, Ohio.	Controversy	Electrical workers	Nonunion contractor engaged.	Adjusted. In future will comply with union contract.	July 10	July 13	3	-------
Topper, Knewbow & Co., Los Angeles, Calif.	Strike	Clothing workers	Asked recognition of union and signed agreement.	Adjusted. Returned; certain conditions granted.	July 17	July 18	300	50
Cluett, Peabody & Co., Troy, N. Y.	Controversy	Shirt makers	Change from piecework to week work.	Unclassified. Resumed piecework plan before arrival of commissioner.	July 9	July 12	1,000	-------
Lehigh Valley Coal Co., Drifton, Pa.	Strike	Miners	Working conditions	Unclassified. Returned; officials to fix terms; commissioner not engaged.	July 7	July 9	300	2
Carpenters, Los Angeles, Calif.	Controversy	Carpenters	Not receiving prevailing union wage.	Pending.	July 18	----------	60	-------
Fisher Body Plant of General Motors, Flint, Mich.	Strike	Automobile-body makers.	Wages and working conditions.	Unclassified. Many returned; places of others filled.	July 5	July 17	60	4,500
Pennsylvania Coal Co., Pittston, Pa.	do	Miners	Dispute between unions relative to collection of dues.	Pending	July 24	----------	1,400	10
S. J. Cohen & Bros., Philadelphia, Pa.	do	Clothing workers	Discharge of 1 employee	Unable to adjust. Some violence displayed by strikers.	July 23	Aug. 3	75	150
Shipyard workers, Mariners' Harbor, N. Y.	do	Shipyard workers	Wage cut; workers asked restoration of wages from 72 to 80 cents per hour.	Adjusted. Wages restored; grievance committee to act for workers in future.	July 20	July 26	500	150
Quarry workers, Concord, N. H.	Controversy	Quarry workers	Alleged discrimination for union activity.	Adjusted. Test case made; man in dispute hired.	do	July 27	1	100
Hospital Annex Building, Baltimore, Md.	Strike	Electricians, plumbers, and steamfitters.	Refusal to work with nonunion workers.	Pending	July 22	----------	11	75
Clothing manufacturers, Greater New York.	Controversy	Clothing workers	New agreements; working conditions.	Adjusted. Agreements signed fixing hours, wages, and registrations.	June 26	July 20	25,000	-------
Jaco Shirt Co., Perth Amboy, N. J.	Strike	Shirt makers	10 per cent wage cut	Adjusted. Wages readjusted	July 12	July 25	90	10
City Hall Annex, Newark, N. J.	Controversy	Building	Nonunion laborers employed.	Adjusted. Contractors will abide by union contract.	June 17	July 18	425	125
City Hall Building, East Orange, N. J.	Strike	Laborers and ironworkers.	Jurisdiction of iron and galvanized sheeting.	Adjusted. Work to be equally divided	June 12	July 20	200	150
Miners, Pittston, Pa.	do	Miners	Dispute between unions relative to dues.	Pending	July 26	----------	1,600	-------
Hellwell Warping Co., Paterson, N. J.	do	Warpers	Certain workers asked $2 per week increase.	Unable to adjust. Other workers employed.	July 2	July 16	14	21
Shell Oil Co., California	Controversy	Oil workers	Annual agreement	Adjusted. 6 day week; some increases; 1 week annual vacation with pay.	July 1	July 28	5,500	3,000
Gaiety Delicatessen & Lunch, New York City.	Strike	Waiters	Union dues dispute; court proceedings in progress to enjoin picketing.	Pending	July 9	----------	2	-------
Cook County paving project, Chicago, Ill.	Threatened strike.	Roller engineers	Organization trouble between hoisting and roller engineers.	do	July 27	----------	450	2,000
Roxana Oil Co. Hammond, Ind.	Controversy	Oil workers	Asked union recognition	Adjusted. Recognition allowed and union labor employed.	July 15	July 31	1,500	-------
Total							48,477	11,165

[1] Not reported.

WAGES AND HOURS OF LABOR

Union Scales of Wages and Hours of Labor, 1913 to 1928: Preliminary Report

THE Bureau of Labor Statistics has collected, as of May 15, 1928, information concerning the union scales of wages and hours of labor in the principal time-work trades in 67 of the leading cities of the United States. A full compilation of the figures is now in progress and will be published as a bulletin of the bureau.

In this article an abridged compilation is made of the 1928 data including certain important trades in 40 localities with comparative figures for all but three of the preceding years back to 1913, in so far as effective scales were found for the several years. Data for 1914, 1915, and 1916 are omitted for lack of space, but figures for those years may be obtained by referring to the September, 1925, issue of the Labor Review.

The trades here covered are:

Bricklayers.
Building laborers.
Carpenters.
Cement finishers.
Compositors: Book and job.
Compositors, daywork: Newspaper.
Electrotypers: Finishers.
Electrotypers: Molders.
Granite cutters, inside.
Hod carriers.
Inside wiremen.
Painters.
Plasterers.
Plasterers' laborers.
Plumbers.
Sheet-metal workers.
Stonecutters.
Structural-iron workers.
Typesetting-machine operators: Book and job.
Typesetting-machine operators, daywork: Newspaper.

The union scale represents the minimum rate and the maximum hours agreed upon between the unions and the employers. Quite often, however, a higher rate was paid to some of the union members. Variable higher rates were paid to many or possibly all of the members in some of the occupations in a few cities.

The union scale generally represents the prevailing rate for the trade in the locality, even though all persons in the trade may not be members of the union.

In cases where scales have been revised since May 15, 1928, and made retroactive to that date or earlier the changes have been included in the tabulation, in so far as information has been received.

Two or more quotations of rates and hours are shown for some occupations in some cities. Such quotations indicate that there were two or more agreements with different employers and possibly made also by different unions, or for subclassifications of a specific occupation, such as building laborers.

Bricklayers

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Atlanta	45.0	60.0	60.0	70.0	112.5	100.0	100.0	112.5	112.5 / 125.0	112.5 / 125.0	140.0	140.0	140.0	53	50	50	44	44	44	44	44	44	44	44	44	44
Baltimore	62.5	75.0	75.0	100.0	125.0	125.0	125.0	150.0	150.0	150.0	162.5	162.5	162.5	[4] 45	44	44	[4] 45	[4] 45	[4] 45	[4] 45	44	44	44	44	44	[2] 44
Birmingham	70.0	70.0	87.5	87.5	100.0	100.0	100.0	112.5	125.0	137.5	150.0	150.0	150.0	[5] 44	44	44	44	44	44	44	44	44	44	44	44	44
Boston	65.0	70.0	80.0	80.0	100.0	100.0	100.0	125.0	125.0	125.0	140.0	140.0	140.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Buffalo	65.0	70.0	75.0	85.0	100.0	100.0	100.0	125.0	125.0	137.5	137.5	150.0	150.0	48	[6] 44	[6] 44	[6] 44	[6] 44	44	44	44	44	44	44	44	44
Charleston, S.C.	40.0	40.0	50.6	75.0	100.0	85.0	85.0	100.0	100.0	100.0	100.0	100.0	100.0	[7] 53	[7] 53	48	48	48	48	48	48	48	44	48	44	44
Chicago	75.0	75.0	75.0	87.5	125.0	125.0	110.0	110.0	125.0	150.0	150.0	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	65.0	75.0	90.0	90.0	125.0	125.0	125.0	125.0	150.0	150.0	162.5	162.5	162.5	45	45	45	45	45	45	45	45	45	44	44	44	44
Cleveland	65.0	75.0	90.0	90.0	125.0	125.0	125.0	140.0	150.0	150.0	150.0	150.0	162.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Dallas	87.5	87.5	100.0	100.0	112.5	150.0	137.5	150.5	150.0	150.0	162.5	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Denver	75.0	87.5	100.0	100.0	125.0	125.0	125.0	137.5	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	40
Detroit	65.0	75.0	80.0	90.0	125.0	100.0	100.0	135.0	150.0	150.0	150.0	157.5	157.5	[11] 48	[13] 44	[13] 44	[13] 44	44	44	44	44	44	44	44	44	44
Fall River	55.0	65.0	75.0	85.0	115.0	115.0	95.0	110.0	110.0	125.0	125.0	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	75.0	75.0	85.0	85.0	125.0	115.0	115.0	135.0	150.0	150.0	150.0	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Jacksonville	62.5	62.5	62.5	75.0	87.5	100.0	87.5	87.5	100.0	125.0	150.0	150.0	125.0	48	48	48	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo	75.0	75.0	87.5	100.0	112.5	112.5	112.5	137.5	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Little Rock	75.0	87.5	87.5	100.0	125.0	125.0	125.0	125.0	137.5	150.0	150.0	150.0	150.0	[14] 44	[14] 44	44	44	44	44	44	44	44	44	44	44	44
Los Angeles	75.0	62.5	75.0	87.5	125.0	125.0	125.0	125.0	125.0	137.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Louisville	65.0	70.0	75.0	85.0	115.0	125.0	125.0	125.0	150.0	150.0	150.0	150.0	150.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Manchester	55.0	65.0	75.0	90.0	112.5	112.5	112.5	112.5	150.0	137.5	137.5	137.5	137.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Memphis	75.0	82.5	87.5	87.5	125.0	112.5	112.5	125.0	150.0	150.0	162.5	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Milwaukee	67.5	72.5	72.5	90.0	125.0	100.0	100.0	125.0	125.0	125.0	125.0	140.0	140.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Minneapolis	65.0	75.0	75.0	87.5	125.0	100.0	100.0	125.0	125.0	125.0	125.0	125.0	137.5	48	[14] 44	[14] 44	44	44	44	44	44	44	44	44	44	44
Newark, N. J.	65.0	75.0	75.0	87.5	125.0	125.0	125.0	125.0	150.0	150.0	162.5	175.0	175.0	44	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	60.0	65.0	70.0	82.5	100.0	100.0	100.0	112.5	125.0	125.0	137.5	137.5	143.8	44	44	44	44	44	44	44	44	44	44	44	44	44
New Orleans	62.5	62.5	62.5	75.0	100.0	100.0	100.0	100.0	125.0	125.0	125.0	125.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
New York	70.0	75.0	81.3	87.5	125.0	125.0	125.0	150.0	150.0	150.0	175.0	175.0	175.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Omaha	70.0	75.0	75.0	87.5	125.0	112.5	100.0	125.0	125.0	125.0	125.0	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	62.5	70.0	80.0	80.0	130.0	130.0	125.0	137.5	150.0	150.0	162.5	162.5	162.5	44	44	44	44	44	[15] 44	44	44	44	44	44	40	40
Pittsburgh	70.0	75.0	75.0	90.0	112.5	150.0	130.0	130.0	140.0	155.0	162.5	162.5	170.0	44	44	44	44	44	44	44	44	44	44	44	44	44

[2] 40 hours per week, June to Cugust, inclusive.
[4] 44½ hours per week, November to March, inclusive.
[5] 48 hours per week, October to December, inclusive.
[6] 48 hours per week, Nov. 16 to Mar. 15.
[7] Work 53 hours, paid for 54.
[11] 44 hours per week, October to April, inclusive.
[13] 48 hours per week, December to February, inclusive.
[14] 48 hours per week, October to April, inclusive.
[15] 40 hours per week, July 1 to Sept. 7.

UNION SCALE OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Bricklayers—Continued

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1927	1924	1925	1926	1927	1928
Portland, Oreg.	75.0	75.0	87.5	100.0	125.0	125.0	112.5	125.0	125.0	137.5	137.5	137.5	150.0	44	44	44	44	44	44	44	44	44	44	44	40	40
Providence	65.0	70.0	70.0	80.0	115.0	115.0	115.0	115.0	125.0	125.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Richmond, Va.	65.0	75.0	75.0	87.5	100.0	100.0	100.0	150.0	125.0	150.0	150.0	125.0	150.0	45	[16] 45	[16] 45	[16] 45	[16] 45	[16] 45	[16] 45	[16] 45	[16] 45	45	45	44	44
St. Louis	70.0	75.0	85.0	100.0	125.0	125.0	125.0	150.0	175.0	175.0	175.0	175.0	175.0	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Paul	65.0	75.0	75.0	87.5	125.0	112.5	100.0	100.0	112.5	112.5	125.0	125.0	125.0	48	[14] 44	44	44	44	44	44	44	44	44	44	44	44
Salt Lake City	75.0	87.5	87.5	100.0	125.0	112.5	112.5	125.0	137.5	137.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	87.5	87.5	100.0	112.5	125.0	125.0	125.0	137.5	137.5	137.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Scranton	60.0	70.0	75.0	75.0	112.5	125.0	125.0	137.5	150.0	150.0	150.0	150.0	150.0	[10] 44	44	44	44	44	44	44	44	44	44	44	44	44
Seattle	75.0	81.3	100.0	112.5	125.0	112.5	112.5	125.0	137.5	137.5	137.5	145.0	150.0	44	44	44	40	40	44	44	44	44	44	44	40	40
Washington	62.5	70.0	75.0	87.5	100.0	125.0	137.5	137.5	150.0	162.5	162.5	162.5	162.5	[17] 45	[17] 45	[17] 45	44	44	44	44	44	44	44	44	44	44

Building laborers

Boston	35.0	37.5	40.0	40.0	67.5 70.0	67.5 70.0	67.5 [18] 70.0	67.5 [18] 70.0	65.0	65.0	74.0	74.0	74.0	48	48	48	44	44	44	44	48	48	48	48	48	48
Chicago	40.0	45.0	50.0	57.5	100.0	100.0	72.5	72.5	72.5	82.5	87.5	90.0 105.0 120.0	90.0 105.0 120.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	20.0	30.0	35.0	40.0	45.0	50.0	40.0	45.0	52.5	55.0	58.0	60.0	60.0	60	50	50	50	50	50	50	50	50	50	50	50	50
Cleveland	----	40.0	55.0	57.5	87.5	87.5	57.5	87.5	87.5	87.5	87.5	87.5	87.5	----	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	----	40.0	----	65.0	75.0	60.0	50.0	60.0	60.0	60.0	60.0	60.0	60.0	----	54	----	44	44	44	44	49½	49½	44	44	44	44
Kansas City, Mo.	27.5	37.5	37.5	57.5	75.0	75.0	70.0	70.0	75.0	75.0	75.0	75.0	75.0	48	48	48	48	44	44	44	44	44	44	44	44	44
Los Angeles	34.4	34.4	43.8	50.0	62.5	62.5	62.5	62.5	62.5	62.5	75.0	75.0	62.5 75.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Louisville	27.9	22.2	30.0	35.0	50.0	40.0	40.0	50.0	50.0	50.0	50.0	50.0	50.0	48	54	50	50	44	44	44	44	44	44	44	44	44
Milwaukee	----	----	----	----	65.0	65.0	55.0	60.0	75.0	75.0	75.0	75.0	75.0	----	----	----	----	44	44	44	44	44	44	44	44	44
Minneapolis	----	----	----	----	----	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0	----	----	----	----	----	44	44	44	44	44	44	44	44
New York	22.5	30.0	40.5	40.5	75.0	60.0 81.3 87.5	60.0 81.3 87.5	75.0 81.3 87.5	81.3 100.0	81.3 100.0	105.0 117.5	90.6 115.0 125.0	93.8 115.0 125.0	48	44	44	48	48	44 48	44 48	44	44	44	44	44	44
Newark, N. J.	----	----	----	----	----	----	----	----	----	100.0	112.5	112.5	112.5	----	----	----	----	----	----	----	----	----	44	44	44	44
New Haven	----	----	----	----	----	----	----	----	----	----	----	75.0	75.0	----	----	----	----	----	----	----	----	----	----	----	44	44
Philadelphia	----	----	----	----	----	----	----	----	----	----	----	----	60.0	----	----	----	----	----	----	----	----	----	----	----	----	44

Pittsburgh	25.0	30.0	45.0	45.0	70.0	100.0 80.0	80.0 50.0	100.0 60.0	70.0	70.0	80.0	112.5 80.0	112.5 80.0	54	48	48	44	44	44	44	44	44	44	44	44	44
Portland, Oreg.	37.5	37.5	50.0	62.5	75.0	67.5	67.5	67.5	67.5	67.5	67.5	67.5	68.8	48	48	48	44	44	44	44	44	44	44	44	44	44
St. Louis	25.0	30.0	33.3 40.0	40.3 45.0	54.0 67.5	54.0 67.5	54.0 57.5	54.0 67.5	75.0	75.0	75.0	75.0 87.5	61.5 75.0 87.5 92.5	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Paul	----	----	----	----	61.3	61.3	55.0	50.0	55.0	55.0	55.0	55.0	55.0	----	----	----	----	49½	49½	49½	49½	49½	44	44	44	44
San Francisco	27.8	37.5	43.8	62.5	75.0	81.3	62.5	62.5	62.5	62.5	62.5	68.8	68.8 75.0	54	48	48	48	48	48	44	44	44	48	48	48	44
Scranton	25.0	30.0	30.0	50.0	58.5	70.0	60.0	60.0	70.0	70.0	70.0	70.0	70.0	54	48	48	48	48	48	48	48	48	48	48	48	48
Seattle	37.5	43.8	56.3	68.8	75.0	75.0	62.5	62.5	62.5	62.5	62.5	62.5 75.0	70.0 82.5	44	44	44	40	44	44	44	44	44	44	44	44 40	44 40

Carpenters

Atlanta	40.0	50.0	50.0	60.0	80.0	70.0	70.0	70.0	80.0	80.0	80.0	80.0	80.0	50	50	50	44	44	44	44	44	44	44	44	44	44
Baltimore	43.8	50.0	62.5	80.0	90.0	90.0	80.0	90.0	90.0	100.0	110.0	110.0	110.0	48	44	44	44	44	44	44	44	44	44	44	44	40
Birmingham	52.5	45.0	55.0	65.0	75.0	75.0	75.0	75.0	87.5	87.5	95.0	100.0	100.0	48	48	48	44	44	44	44	44	44	44	44	44	44
Boston	50.0	60.0	65.0	75.0	100.0	100.0	100.0	105.0	110.0	110.0	125.0	125.0	125.0	44	[20] 44	40	40	40	40	40	44	44	44	44	44	44
Buffalo	50.0	62.5	70.0	70.0	100.0	87.5	87.5	100.0	112.5	112.5	112.5	112.5	112.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Charleston, S. C.	33.3	33.3	37.5 50.0	70.0	80.0	80.0	70.0	70.0	80.0	70.0	70.0 75.0	70.0 75.0	70.0 75.0	[7] 53	[7] 53	48	48	48	48	48	48	44 48	44	48	48 44	44
Chicago	65.0	70.0	70.0	80.0	125.0	125.0	110.0	125.0	125.0	125.0	137.5	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	50.0	62.5	65.0	70.0	100.0	100.0	95.0	105.0	115.0	125.0	131.3	135.0	137.5	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½
Cleveland	50.0	70.0	80.0	85.0	125.0	125.0	104.0	125.0	125.0	125.0	125.0	137.5	137.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Dallas	55.0	62.5	62.5	87.5	100.0	100.0	100.0	100.0	100.0	100.0	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Denver	60.0	70.0	75.0	87.5	112.5	112.5	100.0	112.5	112.5	112.5	112.5	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	40	40
Detroit	50.0	60.0	60.0	80.0	100.0	85.0	85.0	115.0	115.0	115.0	115.0	115.0	115.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Fall River	42.0	50.0	62.5	75.0	100.0	100.0	85.0	95.0	95.0	95.0	100.0	100.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	50.0	57.5	60.0	75.0	100.0	92.5	92.5	92.5	97.5	110.0	110.0	110.0	122.5	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44
Jacksonville	31.3	37.5	40.0 45.0	65.0	80.0	80.0	80.0	80.0	90.0	90.0	100.0	100.0	80.0	48	48	48	48	44	44	44	44	44	44	44	44	44
Kansas City, Mo.	55.0	65.0	65.0	85.0	100.0	100.0	100.0	100.0	112.5	112.5	112.5	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Little Rock	50.0	60.0	60.0	80.0	92.5	80.0	80.0	80.0	90.0	90.0	100.0	100.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Los Angeles	50.0	50.0	62.5	75.0	87.5	100.0	100.0	112.5	112.5	100.0	100.0	100.0	100.0	48	48	48	44	44	44	44	44	44	44	44	44	44
Louisville	45.0	50.0	60.0	60.0	80.0	80.0	80.0	100.0	100.0	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Manchester	40.0	50.0	60.0	60.0	100.0	90.0	90.0	90.0	100.0	100.0	100.0	100.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44

[7] Work 53 hours, paid for 54.
[10] 48 hours per week, September to April, inclusive.
[14] 48 hours per week, October to April, inclusive.
[16] 44½ hours per week, December to February, inclusive.
[17] 44½ hours per week, October to April, inclusive.
[18] Old scale; strike pending.
[20] 40 hours per week, June to September, inclusive.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Carpenters—Continued

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Memphis	50.0	55.0	65.0	75.0	100.0	75.0	75.0	75.0	87.5	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Milwaukee	50.0	56.3	56.3	70.0	100.0	85.0	85.0	95.0	100.0	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Minneapolis	50.0	55.0	60.0	75.0	100.0	100.0	80.0	80.0	90.0	------	------	100.0	100.0	44	44	44	44	44	44	44	44	44	----	----	44	44
Newark, N. J.	50.0	65.0	70.0	80.0	100.0	100.0	112.5	112.5	131.3	137.5	140.0	140.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	47.5	55.0	55.0	65.0	100.0	100.0	90.0	90.0	100.0	100.0	100.0	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
New Orleans	40.0	40.0	50.0	60.0	75.0	100.0	100.0	90.0	90.0	90.0	90.0	90.0	90.0	48	48	48	48	48	44	44	44	44	44	44	44	44
New York	62.5	68.8	68.8	75.0	112.5	112.5	112.5	112.5	131.3	131.3	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Omaha	50.0	57.5	60.0	75.0	112.5	101.3	90.0	100.0	100.0	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	50.0	60.0	70.0	80.0	112.5	112.5	90.0	112.5	112.5	112.5	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Pittsburgh	55.0	71.0	71.0	80.0	90.0	125.0	100.0	120.0	137.5	137.5	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Portland, Oreg.	50.0	56.3	75.0	86.0	100.0	90.0	90.0	100.0	100.0	100.0	100.0	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Providence	50.0	50.0	60.0	70.0	100.0	100.0	85.0	90.0	100.0	110.0	110.0	110.0	117.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Richmond, Va.	37.5	43.8	62.5	62.5	72.5	72.5	72.5	80.0	90.0	90.0	90.0	90.0	90.0	48	48	48	48	47	47	47	47	47	47	47	44	44
St. Louis	62.5	65.0	70.0	82.5	100.0	125.0	110.0	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	40
St. Paul	50.0	55.0	60.0	75.0	100.0	100.0	80.0	80.0	90.0	------	------	100.0	100.0	48	48	44	44	44	44	44	44	44	----	----	44	44
Salt Lake City	62.5	75.0	75.0	100.0	112.5	100.0	90.0	100.0	106.3	106.3	106.3	106.3	106.3	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	62.5	68.8	75.0	87.5	106.3	112.5	104.4	104.4	104.4	104.4	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Scranton	42.5	50.0	60.0	70.0	87.5	87.5	87.5	93.8	112.5	112.5	112.5	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Seattle	56.3	65.0	82.5	93.8	100.0	87.5	87.5	100.0	100.0	112.5	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	40
Washington	50.0	62.5	62.5	87.5	95.0	105.0	105.0	112.5	112.5	112.5	112.5	125.0	125.0	44½	44½	44½	44	44	44	44	44	44	44	44	44	44

Cement finishers

Atlanta	------	------	------	------	------	------	100.0	100.0	100.0	100.0	100.0	100.0	100.0	----	----	----	----	----	----	44	44	44	44	44	44	44
Baltimore	------	50.0	62.5	75.0	100.0	100.0	100.0	125.0	125.0	125.0	125.0	125.0	125.0	----	48	44	44	44	44	44	44	44	44	44	40	40
Birmingham	50.0	62.5	62.5	75.0	75.0	100.0	100.0	100.0	125.0	125.0	125.0	125.0	125.0	48	48	48	48	48	48	48	48	48	44	44	44	44
Boston	62.5	62.5	70.0	75.0	100.0	100.0	100.0	105.0	110.0	110.0	137.5	137.5	137.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Buffalo	50.0	50.0	65.0	65.0	100.0	100.0	85.0	100.0	112.5	112.5	112.5	112.5	112.5	48	48	48	48	44	44	44	44	44	44	44	44	44
Chicago	65.0	67.5	75.0	80.0	125.0	125.0	110.0	110.0	125.0	125.0	137.5	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	50.0	55.0	57.5	60.0	90.0	90.0	87.5	97.5	107.5	117.5	123.8	127.5	130.0	50	50	50	50	44½	44½	44½	44½	44½	44½	44½	44½	44½
Cleveland	60.0 50.0	65.0	77.5	80.0	90.0	125.0	104.0	125.0	125.0	125.0	125.0	125.0	137.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Dallas	50.0	62.5	62.5	87.5	100.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	48	48	48	48	48	48	48	48	48	44	48	48	48

Denver	68.8	75.0	75.0	87.5	100.0	100.0	100.0	112.5	112.5	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	50.0	55.0	60.0	80.0	125.0	100.0	100.0	112.5	150.0	112.5	112.5	137.5	137.5	54	48	44	44	44	44	44	44	44	44	44	44
Fall River	------	65.0	75.0	85.0	115.0	115.0	95.0	110.0	110.0	125.0	125.0	125.0	125.0	-----	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	50.0	60.0	62.5	70.0	90.0	100.0	90.0	95.0	105.0	105.0	105.0	110.0	112.5	50	50	50	50	50	50	50	50	50	50	50	44
Jacksonville	------	------	------	------	------	------	87.5	100.0	100.0	125.0	125.0	125.0	125.0	-----	-----	-----	-----	-----	-----	44	44	44	44	44	44
Kansas City, Mo	62.5	65.0	75.0	87.5	107.5	107.5	100.0	100.0	125.0	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44
Little Rock	55.6	75.0	75.0	87.5	100.0	112.5	112.5	112.5	125.0	125.0	125.0	125.0	125.0	54	54	[22] 44	[22] 44	44	44	44	44	44	44	44	44
Los Angeles	62.5	62.5	------	------	100.0	112.5	112.5	112.5	125.0	125.0	125.0	125.0	{125.0 / 137.5}	48	48	-----	-----	44	44	44	44	44	44	44	44
Louisville	45.0	------	60.0	70.0	80.0	90.0	90.0	110.0	110.0	110.0	125.0	125.0	125.0	60	-----	44	44	44	44	44	44	44	41	44	44
Manchester	------	60.0	75.0	90.0	112.5	112.5	112.5	112.5	150.0	137.5	137.5	137.5	137.5	-----	44	44	44	44	44	44	44	44	44	44	44
Memphis	50.0	------	------	------	87.5	------	100.0	100.0	112.5	112.5	112.5	112.5	112.5	54	-----	-----	-----	44	-----	44	44	44	44	44	44
Milwaukee	45.0	50.0	60.0	70.0	85.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	48	48	44	44	44	44	44	44	44	44	44	44
Minneapolis	------	55.0	55.0	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-----	48	48	44	44	44	44	44	44	44	44	44
Newark, N. J	62.5	75.0	75.0	87.5	125.0	125.0	125.0	125.0	150.0	150.0	162.5	175.0	175.0	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	------	65.0	70.0	82.5	100.0	100.0	100.0	112.5	125.0	125.0	137.5	137.5	143.8	-----	44	44	44	44	44	44	44	44	44	44	44
New Orleans	------	------	------	------	------	100.0	100.0	100.0	100.0	100.0	112.5	112.5	112.5	-----	-----	-----	-----	-----	45	45	45	45	44	44	44	44
New York	62.5	70.0	70.0	75.0	112.5	112.5	112.5	112.5	131.3	131.3	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44
Omaha	------	62.5	62.5	75.0	112.5	100.0	100.0	100.0	112.5	112.5	112.5	112.5	112.5	-----	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	45.0	55.0	65.0	72.5	100.0	100.0	100.0	112.5	112.5	112.5	125.0	125.0	125.0	49½	44	44	44	44	44	44	44	44	44	44	44
Pittsburgh	------	56.3	75.0	75.0	82.5	112.5	87.5	112.5	125.0	125.0	135.0	135.0	135.0	-----	44	44	44	44	44	44	44	44	44	44	44
Portland, Oreg	62.5	62.5	87.5	87.5	100.0	90.0	90.0	100.0	102.5	112.5	112.5	112.5	112.5	48	44	44	44	44	44	44	44	44	44	40	40	40
Providence	------	62.5	62.5	80.0	100.0	100.0	87.5	100.0	115.0	125.0	115.0	115.0	115.0	-----	44	44	44	44	44	44	44	44	44	44	44	44
Richmond	------	------	------	------	------	87.5	87.5	125.0	125.0	------	------	100.0	125.0	-----	-----	-----	-----	-----	44	44	44	44	-----	-----	44	44
St. Louis	60.0	{62.5 / 65.0}	75.0	82.5	125.0	125.0	100.0	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	40
St. Paul	50.0	60.0	60.0	75.0	100.0	100.0	80.0	100.0	100.0	100.0	100.0	100.0	100.0	48	48	48	44	44	44	44	44	44	44	44	44	44
Salt Lake City	------	------	------	------	------	------	------	------	------	------	------	------	150.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	44
San Francisco	75.0	75.0	87.5	100.0	112.5	112.5	104.4	112.5	112.5	112.5	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Scranton	------	------	------	------	------	------	------	125.0	150.0	150.0	150.0	150.0	150.0	-----	-----	-----	-----	-----	-----	44	44	44	44	44	44	40
Seattle	62.5	68.8	81.3	100.0	112.5	112.5	100.0	100.0	112.5	112.5	112.5	112.5	112.5	48	48	48	40	40	40	44	44	44	44	44	44	44
Washington	------	70.0	70.0	87.5	90.0	100.0	100.0	112.5	112.5	112.5	112.5	112.5	112.5	-----	44	44	44	44	44	44	44	44	44	44	44	44

Compositors: Book and job

Atlanta	34.4	37.5	37.5	43.8	57.5	75.0	80.0	80.0	80.0	80.0	80.0	100.0	100.0	48	48	48	48	48	48	44	44	44	44	44	44	44
Baltimore	37.5	43.8	43.8	54.2	81.3	83.3	83.3	90.9	90.9	90.9	90.9	90.9	90.9	48	48	48	48	48	48	48	44	44	44	44	44	44
Birmingham	40.6	44.8	44.8	44.8	76.0	80.0	80.0	80.0	80.0	80.0	92.5	92.5	92.5	48	48	48	48	48	44	44	44	44	44	44	44	44
Boston	41.7	45.8	50.0	55.2	72.9	87.0	87.0	87.0	92.0	92.0	92.0	96.0	96.0	48	48	48	48	48	44	44	44	44	44	44	44	44
Buffalo	39.6	43.8	45.8	59.4	71.9	83.3	90.9	90.9	90.9	90.9	100.0	100.0	100.0	48	48	48	48	48	48	44	44	44	44	44	44	44

[22] 48 hours per week, October to March, inclusive.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Compositors: Book and job—Continued

City	Rates per hour (cents)													Hours per week										
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Charleston, S. C	33.3	37.5	37.5	37.5	37.5	98.9	98.9	90.9	84.1	90.9	84.1	84.1	84.1	48	48	48	48	48	44	44	44	44	44	44	44	44
Chicago	46.9	50.0	57.3	75.0	95.8	106.0	106.0	110.0	115.9	115.9	115.9	122.7	122.7	48	48	48	48	48	44	44	44	44	44	44	44	44
Cincinnati	40.6	46.9	46.9	51.0	75.0	104.5	104.5	104.5	109.1	109.1	109.1	113.6	113.6	48	48	48	48	48	44	44	44	44	44	44	44	44
Cleveland	39.6	43.8	50.0	62.5	87.5	93.8	93.8	93.8	100.0	104.5	106.8	109.1	109.1	48	48	48	48	48	44	44	44	44	44	44	44	44
Dallas	52.1	52.1	57.3	70.8	88.5	100.0	93.2	93.2	93.2	93.2	93.2	93.2	100.0	48	48	48	48	48	44	44	44	44	44	44	44	44
Denver	54.2	54.2	59.4	65.6	81.3	81.3	95.5	95.5	95.5	102.3	102.3	102.3	102.3	48	48	48	48	48	48	44	44	44	44	44	44	44
Detroit	38.5	50.0	54.7	72.9	92.7	96.9	105.0	105.0	105.0	105.0	110.0	115.0	120.0	48	48	48	48	48	44	44	44	44	44	44	44	44
Fall River	33.3	37.5	39.6	41.7	62.5	72.7	72.7	72.7	81.8	81.8	81.8	81.8	81.8	48	48	48	48	48	44	44	44	44	44	44	44	44
Indianapolis	43.8	45.8	52.1	54.2	75.0	100.0	92.7	95.5	95.5	98.0	100.0	102.3	104.5	48	48	48	48	48	44	44	44	44	44	44	44	44
Jacksonville	37.5	43.8	43.8	52.1	75.0	81.8	81.8	81.8	81.8	81.8	98.9	98.9	98.9	48	48	48	48	48	44	44	44	44	44	44	44	44
Kansas City, Mo	41.7	45.8	50.0	54.2	72.9	84.4	84.4	88.6	92.0	94.3	96.6	98.9	100.0	48	48	48	48	48	48	48	44	44	44	44	44	44
Little Rock	37.5	43.8	43.8	43.8	72.9	72.9	70.0	70.0	70.0	85.2	96.6	96.6	92.2	48	48	48	48	48	48	44	44	44	44	44	44	44
Los Angeles	46.9	50.0	52.1	58.3	75.0	95.5	95.5	95.5	102.3	102.3	102.3	106.8	106.8	48	48	48	48	48	44	44	44	44	44	44	44	44
Louisville	37.5	39.6	43.8	45.8	45.8	79.2	79.0	79.0	79.0	------	------	79.0	79.0	48	48	48	48	48	48	44	44	44	----	----	44	44
Manchester	35.4	37.5	39.6	41.7	66.7	77.3	79.5	79.5	79.5	79.5	79.5	79.5	79.5	48	48	48	48	48	44	44	44	44	44	44	44	44
Memphis	40.0	47.1	48.1	55.4	93.8	93.8	82.3	82.3	82.3	80.0	80.0	81.8	81.8	48	48	48	48	48	48	44	44	44	44	44	44	44
Milwaukee	41.7	47.9	47.9	54.2	72.9	85.4	93.2	93.2	93.2	93.2	95.5	100.0	102.3	48	48	48	48	48	48	44	44	44	44	44	44	44
Minneapolis	43.8	45.8	45.8	54.0	87.5	87.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	48	48	48	48	48	44	44	44	44	44	44	44	44
Newark, N. J	47.9	50.0	56.3	72.9	91.7	111.4	102.3	109.1	115.9	115.9	118.2	120.5	122.7	48	48	48	48	48	44	44	44	44	44	44	44	44
New Haven	40.6	40.6	44.8	45.8	58.3	58.3	86.4	86.4	86.4	86.4	86.4	86.4	86.4	48	48	48	48	48	48	44	44	44	44	44	44	44
New Orleans	43.8	43.8	43.8	50.0	71.9	71.9	78.4	78.4	78.4	78.4	78.4	78.4	78.4	48	48	48	48	48	48	44	44	44	44	44	44	44
New York	50.0	52.1	58.3	75.0	93.8	113.6	113.6	113.6	120.5	120.5	122.7	125.0	127.3	48	48	48	48	48	44	44	44	44	44	44	44	44
Omaha	37.5	46.9	53.1	68.8	87.5	93.2	93.2	93.2	93.2	93.2	93.2	100.0	100.0	48	48	48	48	48	44	44	44	44	44	44	44	44
Philadelphia	39.6	43.8	50.0	60.4	89.6	89.6	89.6	89.6	89.6	90.0	90.0	90.0	90.0	48	48	48	48	48	48	44	44	44	44	44	44	44
Pittsburgh	39.6	43.8	47.9	60.4	81.3	100.0	100.0	100.0	100.0	100.0	100.0	104.5	104.5	48	48	48	48	48	44	44	44	44	44	44	44	44
Portland, Oreg	53.1	53.5	59.4	75.0	85.4	95.8	95.8	90.9	90.9	102.3	102.3	105.7	105.7	48	48	48	48	48	44	44	44	44	44	44	44	44
Providence	37.5	37.5	45.8	50.0	72.9	72.9	79.5	79.5	90.9	90.9	90.9	90.9	90.9	48	48	48	48	48	48	44	44	44	44	44	44	44
St. Louis	43.8	47.9	52.7	52.7	79.2	92.8	92.8	92.8	98.0	98.0	98.0	103.0	103.0	48	48	48	48	48	44	44	44	44	44	44	44	44
St Paul	43.8	45.8	45.8	54.0	83.3	87.5	95.5	90.9	95.5	95.5	95.5	------	95.5	48	48	48	48	48	48	44	44	44	44	44	----	44
San Francisco	50.0	54.2	58.3	62.5	81.3	104.5	104.5	104.5	104.5	115.9	115.9	115.9	115.9	48	48	48	48	48	44	44	44	44	44	44	44	44
Scranton	43.8	47.9	47.9	52.1	71.9	77.1	85.2	90.9	90.9	100.0	100.0	102.3	104.5	48	48	48	48	48	48	44	44	44	44	44	44	44
Seattle	53.1	56.3	59.4	75.0	87.5	93.8	93.8	93.8	93.8	93.8	93.8	100.0	100.0	48	48	48	48	48	44	44	44	44	44	44	44	44
Washington	40.0	47.9	50.0	62.5	83.3	90.9	90.9	90.9	90.9	90.9	90.9	100.0	100.0	48	[24] 48	[24] 48	[24] 48	[24] 48	44	44	44	44	44	44	44	44

Compositors, day work: Newspaper

Atlanta	43.8	43.8	50.0	60.6	63.8	91.0	86.5	86.5	93.8	93.8	100.0	100.0	100.0	48	48	48	48	48	48	48	48	48	48	48	48
Baltimore	50.0	61.9	61.9	65.5	93.3	93.3	95.5	95.5	106.8	106.8	110.2	110.2	110.2	42	42	42	42	45	45	44	44	44	44	44	44
Birmingham	52.5	56.5	57.5	67.5	67.5	67.5	82.5	82.5	82.5	82.5	92.5	95.0	97.5	[25] 42	[25] 42	[25] 42	[25] 42	[28] 42	[25] 42	[25] 42	[25] 42	[25] 42	[26] 42	[25] 42	42
Boston	63.0	68.0	68.0	83.0	95.0	95.0	107.0	107.0	112.0	117.0	117.0	125.0	125.0	[26] 42	[26] 42	[26] 42	[26] 42	[26] 42	[26] 42	[25] 44	[25] 44	[25] 44	[25] 44	[25] 44	[25] 44
Buffalo	50.0	53.1	59.4	65.6	71.9	87.5	87.5	87.5	95.8	95.8	102.1	102.1	102.1	48	48	48	48	48	48	48	48	48	48	48	48
Charleston, S. C	33.3	42.9	42.9	42.9	42.9	90.6	90.6	83.3	83.3	83.3	83.3	83.3	92.7	48	[25] 42	[25] 42	[25] 42	[25] 42	48	48	48	48	48	48	48
Chicago	62.0	62.0	66.0	79.0	89.0	115.0	115.0	115.0	129.0	129.0	129.0	135.6	138.0	[27] 45	[27] 45	[25] 45	[25] 45	[25] 45	48	48	48	45	45	45	45
Cincinnati	52.1	56.3	56.3	87.5	107.3	107.3	107.3	113.3	113.3	113.8	113.8	113.8	118.3	[28] 47¾	48	48	48	45	45	45	45	45	45	45	45
Cleveland	53.8	62.5	62.5	68.8	87.5	93.8	96.9	103.1	107.3	107.3	116.7	116.7	119.0	48	48	48	48	48	48	48	48	48	48	45	45
Dallas	55.0	59.4	62.5	76.0	88.5	88.5	90.6	90.6	100.0	100.0	106.3	106.3	106.3	48	48	48	48	48	48	48	48	48	48	48	48
Denver	63.3	63.3	72.7	72.7	97.8	97.8	93.3	93.3	103.3	103.3	103.3	103.3	110.6	45	45	45	45	45	45	45	45	45	45	45	45
Detroit	55.0	60.5	60.5	74.5	87.0	97.0	97.0	97.0	113.0	113.0	120.0	125.0	125.0	48	[29] 48	[29] 48	[29] 48	[29] 48	[29] 48	48	48	48	48	[30] 48	45
Fall River	37.5	44.8	45.8	49.0	75.0	79.2	79.2	79.2	87.5	87.5	87.5	87.5	87.5	48	48	48	48	48	48	48	48	48	48	48	48
Indianapolis	50.0	56.3	56.3	60.4	81.3	93.8	89.6	100.0	100.0	100.0	104.2	106.3	106.3	48	48	48	48	48	48	48	48	48	48	48	48
Jacksonville	37.5	52.1	52.1	65.6	83.3	83.3	83.3	83.3	83.3	89.6	100.0	100.0	100.0	48	48	48	48	48	48	48	48	48	48	88	48
Kansas City, Mo	59.4	59.4	59.4	68.8	90.6	90.6	90.6	90.6	90.6	95.8	102.1	104.1	104.2	48	48	48	48	48	48	48	48	48	48	48	48
Little Rock	47.9	52.1	52.1	62.5	72.9	83.3	83.3	83.3	83.3	84.4	84.4	84.4	87.5	48	48	48	48	48	48	48	48	48	48	48	48
Los Angeles	62.5	66.7	66.7	75.6	86.7	86.7	101.1	101.1	107.8	------	------	114.0	117.8	45	45	45	45	45	45	45	45	45	------	------	45
Louisville	49.0	54.2	54.2	62.5	87.5	82.9	87.5	87.5	93.8	93.8	93.8	93.8	93.8	48	48	48	48	48	48	48	48	48	48	48	48
Manchester	35.4	37.5	39.6	41.7	66.7	70.8	72.9	72.9	80.2	82.3	83.3	83.3	83.3	48	48	48	48	48	48	48	48	48	48	48	48
Memphis	57.8	57.8	60.0	66.7	86.7	92.8	88.9	93.3	93.3	83.3	93.3	100.0	100.0	45	45	[25] 45	[25] 45	[25] 45	[25] 45	[25] 45	[25] 45	[25] 45	48	45	45
Milwaukee	45.8	54.2	56.3	56.3	77.1	93.8	93.8	93.8	97.9	102.5	102.5	106.3	106.3	48	48	48	48	48	48	48	48	48	48	48	48
Minneapolis	54.0	54.0	54.0	62.5	87.5	93.8	88.5	88.5	97.9	98.0	98.0	97.9	97.9	48	48	48	48	48	48	48	48	48	48	48	48
Newark, N. J.	60.9	63.0	69.6	76.1	89.1	110.9	110.9	110.9	110.9	119.6	121.7	130.4	132.6	46	46	46	46	46	46	46	46	46	46	46	46
New Haven	46.9	50.0	50.0	50.0	72.9	79.2	79.2	79.2	85.4	85.4	87.5	89.6	89.6	48	48	48	48	48	48	48	48	48	48	48	48
New York	66.7	66.7	71.1	96.7	122.2	122.2	122.2	122.2	128.9	133.3	133.3	140.0	142.2	45	45	45	45	45	45	45	45	45	45	45	45
Omaha	50.0	53.1	53.1	68.8	87.5	87.5	87.5	87.5	90.6	90.6	90.6	96.9	97.9	48	48	48	48	48	48	48	48	48	48	48	48
Philadelphia	41.7	41.7	50.0	66.7	81.3	79.2	79.2	79.2	87.5	87.5	87.5	91.3	91.3	48	48	48	48	48	48	48	48	48	48	46	46
Pittsburgh	55.0	61.0	65.0	77.0	87.5	111.8	111.8	118.9	121.1	121.1	125.6	126.7	126.7	48	[25] 45	[25] 45	[25] 45	[25] 45	48	46½	46½	45	45	45	45
Portland, Oreg	68.3	68.3	72.7	100.0	106.7	106.7	106.7	106.7	106.7	106.7	106.7	106.7	106.7	45	45	45	45	45	45	45	45	45	45	45	45
Providence	47.9	50.0	52.1	66.7	87.5	100.0	95.8	95.8	104.2	104.2	104.2	108.3	108.3	48	48	48	48	48	48	48	48	48	48	48	48
Richmond, Va	33.3	37.5	45.8	45.8	58.3	87.5	87.5	87.5	87.5	87.5	94.8	94.8	94.8	48	48	48	48	48	48	48	48	48	48	48	48
St. Louis	58.7	63.4	63.4	63.4	91.3	91.3	91.3	91.3	102.2	106.5	110.9	110.9	114.1	46	46	46	46	46	46	46	46	46	46	46	46
St. Paul	54.5	54.5	54.5	63.0	87.5	88.8	88.8	88.8	93.8	101.3	101.3	101.3	101.3	48	[30] 48	[30] 48	[30] 48	[30] 48	[30] 48	[30] 48	[30] 48	[30] 48	[30] 48	[30] 48	48
Salt Lake City	62.5	62.5	62.5	71.9	87.5	87.5	96.9	96.9	96.9	104.3	104.3	104.3	104.3	48	48	48	48	48	48	48	48	48	46	46	46
San Francisco	64.4	69.0	68.9	75.6	93.3	107.8	107.8	107.8	107.8	115.6	115.6	115.6	120.0	45	42	45	45	45	45	45	45	45	45	45	45
Scranton	47.9	52.1	52.1	60.4	81.3	87.5	87.5	95.8	95.8	104.2	110.4	112.5	114.9	48	48	48	48	48	48	48	48	48	48	48	47
Seattle	75.0	78.6	78.6	100.0	114.3	114.3	114.3	114.3	121.4	121.4	121.4	123.2	123.2	42	42	42	42	42	42	42	42	42	42	42	42
Washington	60.7	60.7	69.8	92.9	104.0	104.0	104.0	104.0	110.0	110.0	128.6	128.6	128.6	42	42	42	42	42	42	42	42	42	42	42	42

[24] 44 hours per week for 3 months, June 1 and Sept. 30.
[25] Minimum; maximum, 8 hours per day.
[26] Actual hours worked, minimum, 6; maximum, 8 hours per day.
[27] Actual hours worked; minimum, 7; maximum, 8 hours per day.
[28] Work 47¾ hours, paid for 48.
[29] Maximum; minimum, 7 hours per day.
[30] Maximum; minimum, 45 hours per week.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Electrotypers: Finishers

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Atlanta	45.8	50.0	50.0	57.3	88.5	96.6	93.2	93.2	96.6	102.3	102.3	102.3	96.6	48	48	48	48	48	44	44	44	44	44	44	44	44
Birmingham	50.0	50.0	50.0	50.0	72.9	89.8	89.8	96.6	96.6	96.6	102.3	102.3	102.3	48	48	48	48	48	44	44	44	44	44	44	44	44
Boston	50.0	50.0	52.5	52.5	78.1	90.6	90.6	99.0	99.0	99.0	99.0	99.0	99.0	48	48	48	48	48	48	48	48	48	48	48	48	48
Buffalo	43.8	43.8	50.0	56.3	72.9	77.1	77.1	81.3	81.3	87.5	87.5	91.7	93.8	48	48	48	48	48	48	48	48	48	48	48	48	48
Chicago	49.0	56.3	58.3	77.1	104.2	113.7	108.0	129.5	134.1	138.6	140.9	140.9	140.9	48	48	48	48	48	44	44	44	44	44	44	44	44
Cincinnati	43.8	45.8	47.9	52.1	66.7	87.5	95.5	85.4	89.6	91.7	91.7	95.8	97.9	48	48	48	48	48	48	44	48	48	48	48	48	48
Cleveland	41.7	47.9	52.1	58.3	83.3	83.3	75.0	83.3	93.8	93.8	93.8	97.9	100.0	48	48	48	48	48	48	48	48	48	48	48	48	48
Dallas	37.5	37.5	43.8	65.6	72.9	72.9	------	------	------	113.6	113.6	113.6	113.6	48	48	48	48	48	48	------	------	------	44	44	44	44
Denver	43.8	47.9	47.9	54.2	62.5	75.0	75.0	75.0	90.9	90.9	90.9	90.9	90.9	48	48	48	48	48	44	44	44	44	44	44	44	44
Detroit	37.5	52.1	56.3	56.3	93.8	102.3	102.3	107.5	113.6	113.6	113.6	125.0	125.0	48	48	48	48	48	44	44	46½	44	44	44	44	44
Indianapolis	43.8	50.0	50.0	63.6	63.6	63.6	85.2	[31]100.0	95.5	95.5	95.5	95.5	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo	43.8	50.0	50.0	62.5	90.6	89.6	89.6	89.6	100.0	104.5	104.5	104.5	104.5	48	48	48	48	48	48	48	48	46	44	44	44	44
Los Angeles	50.0	56.3	56.3	70.8	86.4	86.4	86.4	102.3	102.3	102.3	102.3	113.6	113.6	48	48	48	48	44	44	44	44	44	44	44	44	48
Louisville	------	------	------	------	------	------	------	------	------	73.9	102.3	102.3	102.3	------	------	------	------	------	------	------	------	------	44	44	44	44
Memphis	45.8	45.8	45.8	62.5	62.5	68.2	------	------	------	100.0	102.3	113.6	113.6	48	48	48	48	48	44	------	------	------	44	44	44	44
Milwaukee	43.8	50.0	50.0	56.3	75.0	81.3	81.3	81.3	93.8	93.8	93.8	93.8	93.8	48	48	48	48	48	48	48	48	48	48	48	48	48
Minneapolis	36.1	50.0	50.0	59.4	81.3	91.7	91.7	87.5	95.8	95.8	95.8	97.9	97.9	54	48	48	48	48	48	48	48	48	48	48	48	48
Newark, N. J	------	------	------	75.0	109.1	134.1	134.1	134.1	140.9	140.9	140.9	140.9	140.9	------	------	------	44	44	44	44	44	44	44	44	44	44
New Haven	37.4	44.9	44.9	46.7	62.5	75.0	75.0	79.5	79.5	79.5	79.5	81.3	88.6	54	53½	53½	53½	48	48	48	48	48	48	48	48	44
New York	62.5	68.8	68.8	75.0	109.1	134.1	134.1	134.1	140.9	140.9	140.9	140.9	140.9	44	44	44	44	44	44	44	44	44	44	44	44	44
Omaha	43.8	52.1	52.1	66.7	113.6	[32]102.3	[32]102.3	97.7	102.3	102.3	102.3	102.3	102.3	48	48	48	48	44	44	44	44	44	44	44	44	44
Philadelphia	41.7	52.1	64.2	70.0	103.1	113.6	113.6	125.0	125.0	114.6	114.6	118.8	118.8	48	48	48	48	48	44	44	44	44	48	48	48	48
Pittsburgh	43.8	45.8	45.8	45.8	85.4	79.2	79.2	87.5	91.7	91.7	91.7	93.8	93.8	48	48	48	48	48	48	48	48	48	48	48	48	48
Portland, Oreg	50.0	56.3	56.3	90.9	104.5	104.5	104.5	104.5	111.4	114.8	114.8	119.3	119.3	48	48	48	44	44	44	44	44	44	44	44	44	44
Richmond, Va	------	52.1	57.3	60.4	78.1	93.8	93.8	104.2	104.2	104.2	104.2	104.2	104.2	------	48	48	48	48	48	48	48	48	48	48	48	48
St. Louis	45.8	47.9	55.0	55.0	85.4	89.6	89.6	93.8	102.2	109.1	111.4	113.6	113.6	48	48	48	48	48	48	48	48	46½	44	44	44	44
St. Paul	43.8	50.0	50.0	59.4	81.3	91.7	91.7	87.5	95.8	95.8	95.8	97.9	97.9	48	48	48	48	48	48	48	48	48	48	48	48	48
San Francisco	56.3	56.3	62.5	62.5	79.2	113.6	113.6	113.6	113.6	125.0	125.0	125.0	125.0	48	48	48	48	48	44	44	44	44	44	44	44	44
Scranton	41.7	43.8	43.8	50.0	75.0	90.9	90.9	90.9	97.7	97.7	102.3	102.3	106.8	48	48	48	48	48	44	44	44	44	44	44	44	44
Seattle	52.1	52.1	66.7	77.8	104.5	104.5	104.5	------	113.6	118.2	118.2	119.3	119.3	48	48	45	45	44	44	44	-----	44	44	44	44	44
Washington	50.0	56.3	58.3	58.3	93.8	102.3	90.9	90.9	102.3	102.3	113.6	113.6	113.6	44	48	48	48	48	44	44	44	44	44	44	44	44

Electrotypers: Molders

Atlanta	45.8	50.0	50.0	57.3	88.5	96.6	90.9	94.3	96.6	96.6	102.3	102.3	96.6	48	48	48	48	48	44	44	44	44	44	44	44	44
Birmingham	50.0	50.0	50.0	50.0	72.9	89.8	89.8	96.6	96.6	96.6	102.3	102.3	102.3	48	48	48	48	48	44	44	44	44	44	44	44	44
Boston	50.0	50.0	52.5	52.5	78.1	90.6	90.6	99.0	99.0	99.0	99.0	99.0	99.0	48	48	48	48	48	48	48	48	48	48	48	48	48
Buffalo	43.8	50.0	50.0	56.3	72.9	77.1	77.1	81.3	81.3	87.5	87.5	91.7	93.8	48	48	48	48	48	48	48	48	48	48	48	48	48
Chicago	54.2	60.4	60.4	77.1	104.2	113.7	108.0	129.5	134.1	138.6	140.9	140.9	140.9	48	48	48	48	48	44	44	44	44	44	44	44	44
Cincinnati	47.9	50.0	52.1	52.1	70.8	87.5	95.5	85.4	89.6	91.7	91.7	95.8	97.9	48	48	48	48	48	48	44	48	48	48	48	48	48
Cleveland	43.8	52.1	56.3	60.4	83.3	83.3	75.0	83.3	93.8	93.8	93.8	97.0	100.0	48	48	48	48	48	48	48	48	48	48	48	48	48
Dallas	43.8	41.7	43.8	65.6	72.9	72.9	------	------	------	113.6	113.6	113.6	113.6	48	48	48	48	48	48	------	------	------	44	44	44	44
Denver	52.1	54.2	54.2	60.4	69.8	79.5	79.5	79.5	98.9	90.9	90.9	90.9	90.9	48	48	48	48	48	44	44	44	44	44	44	44	44
Detroit	37.5	52.1	56.3	56.3	93.8	102.3	102.3	107.5	113.6	113.6	113.6	125.0	125.0	48	48	48	48	48	44	44	46½	44	44	44	44	44
Indianapolis	45.8	52.3	52.3	65.9	65.9	65.9	85.2	106.0	95.5	95.5	95.5	95.5	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo	43.8	50.0	50.0	62.5	90.6	95.8	95.8	95.8	100.0	104.5	104.5	104.5	104.5	48	48	48	48	48	48	48	48	46	44	44	44	44
Los Angeles	50.0	56.3	56.3	70.8	86.4	86.4	86.4	102.3	102.3	102.3	102.3	113.6	125.0	48	48	48	48	44	44	44	44	44	44	44	44	48
Louisville	------	------	------	------	------	------	------	------	------	73.9	102.3	102.3	102.3	------	------	------	------	------	------	------	------	------	44	44	44	44
Memphis	45.8	45.8	45.8	62.5	62.5	68.2	------	------	------	100.0	102.3	113.6	113.6	48	48	48	48	48	44	------	------	------	44	44	44	44
Milwaukee	43.8	50.0	50.0	56.3	75.0	81.3	81.3	81.3	93.8	93.8	93.8	93.8	93.8	48	48	48	48	48	48	48	48	48	48	48	48	48
Minneapolis	36.1	56.3	56.3	59.4	81.3	91.7	91.7	87.5	95.8	95.8	95.8	97.9	97.9	54	48	48	48	48	48	48	48	44	48	48	48	48
Newark, N. J	------	------	------	75.0	109.1	134.1	134.1	134.1	140.9	140.9	140.9	140.9	140.9	------	------	------	44	44	44	44	44	44	44	44	44	44
New Haven	37.4	44.9	44.9	46.7	62.5	75.0	75.0	79.5	79.5	79.5	79.5	81.3	88.6	54	53½	53½	53½	48	48	48	48	48	48	48	48	44
New York	62.5	68.8	68.8	75.0	109.0	134.1	134.1	134.1	140.9	140.9	140.9	140.9	140.9	44	44	44	44	44	44	44	44	44	44	44	44	44
Omaha	43.8	52.1	52.1	66.7	113.6	102.3	102.3	102.3	102.3	102.3	102.3	102.3	102.3	48	48	48	48	44	44	44	44	44	44	44	44	44
Philadelphia	45.8	56.3	64.2	70.0	113.1	113.6	113.6	125.0	125.0	114.6	114.6	118.8	118.8	48	48	48	48	44	44	44	44	44	48	48	48	48
Pittsburgh	50.0	52.1	53.1	53.1	87.5	87.5	79.2	87.5	91.7	91.7	91.7	93.8	93.8	48	48	48	48	48	48	48	48	48	48	48	48	48
Portland, Oreg	50.0	56.3	56.3	90.9	104.5	104.5	104.5	104.5	111.4	114.8	114.8	119.3	119.3	48	48	48	48	44	44	44	44	44	44	44	44	44
Richmond, Va	------	52.1	57.3	60.4	78.1	93.8	93.8	104.2	104.2	104.2	104.2	104.2	104.2	------	48	48	48	48	48	48	48	48	48	48	48	48
St. Louis	47.9	50.0	57.3	57.3	85.4	89.6	89.6	93.8	102.2	109.1	111.4	113.6	113.6	48	48	48	48	48	48	48	48	46½	44	44	44	44
St. Paul	50.0	56.3	56.3	59.4	81.3	91.7	91.7	87.5	95.8	95.8	95.8	97.9	97.9	48	48	48	48	48	48	48	48	48	48	48	48	48
San Francisco	56.3	56.3	62.5	62.5	79.2	113.6	113.6	113.6	113.6	125.0	125.0	125.0	125.0	48	48	48	48	48	44	44	44	44	44	44	44	44
Scranton	47.9	50.0	50.0	56.3	75.0	90.9	90.9	90.9	97.7	97.7	102.3	102.3	106.8	48	48	48	48	48	44	44	44	44	44	44	44	44
Seattle	52.1	52.1	66.7	77.8	104.5	104.5	104.5	------	113.6	118.2	118.2	119.3	119.3	48	48	45	45	44	44	44	------	44	44	44	44	44
Washington	50.0	56.3	58.3	58.3	93.8	102.3	90.9	90.9	102.3	102.3	113.6	113.6	113.6	44	48	48	48	48	44	44	44	44	44	44	44	44

[1] Including bonus of $6.50 per week.

[2] Including bonus of $7 per week.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Granite cutters, inside

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Baltimore	50.0	50.0	62.5	75.0	100.0	100.0	100.0	100.0	112.5	112.5	118.8	118.8	118.8	44	44	44	44	44	44	44	44	44	44	44	44	44
Boston	45.6	50.0	60.0	75.0	100.0	100.0	100.0	100.0	100.0	100.0	110.0	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Buffalo	43.8	53.1	63.1	75.0	100.0	100.0	100.0	100.0	100.0	106.3	106.3	112.5	112.5	44	44	44	44	44	44	44	44	44	[34] 44	[34] 44	[34] 44	[39] 44
Charleston, S. C	45.0	45.0	50.0	69.0	87.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	105.0	44	44	44	44	44	44	40	40	44	44	44	44	40
Cincinnati	-----	50.0	62.5	75.0	100.0	100.0	100.0	100.0	112.5	112.5	112.5	112.5	112.5	-----	44	44	44	44	44	40	44	[34] 44	[34] 44	[34] 44	[34] 44	44
Cleveland	50.0	50.0	62.5	81.3	100.0	100.0	100.0	106.3	106.3	115.6	115.6	115.6	115.6	44	44	44	44	44	44	40	44	[34] 44	[34] 44	[34] 44	[34] 44	44
Dallas	-----	50.0	62.5	81.3	100.0	100.0	100.0	100.0	100.0	106.3	106.3	106.3	106.3	-----	44	44	44	44	44	44	44	44	44	[34] 44	[34] 44	44
Denver	57.0	57.0	68.8	85.0	100.0	106.3	106.3	106.3	106.3	106.3	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	45.0	51.3	62.5	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	112.5	112.5	44½	44	44	44	44	44	44	44	44	44	44	44	44
Fall River	43.0	50.0	62.5	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	110.0	110.0	45	44	44	44	44	44	44	44	44	44	44	[a] 44	[a] 44
Kansas City, Mo										100.0	106.3	106.3	106.3										44	44	44	44
Los Angeles	62.5	67.5	70.0	87.5	100.0	112.5	112.5	112.5	112.5	-----	-----	112.5	112.5	48	44	44	44	44	44	44	44	44	44	-----	-----	44	44
Louisville	45.0	50.0	60.0	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	45	44	44	44	44	44	44	44	44	44	44	44	44
Manchester	40.6	50.0	50.0	72.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J	50.0	50.0	62.5	79.0	100.0	112.5	112.5	112.5	112.5	112.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	40	44	44
New Haven	41.0	50.0	60.0	72.5	87.5	100.0	100.0	100.0	100.0	112.5	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	[3] 44
New Orleans	45.0	50.0	50.0	75.0	80.0	100.0	100.0	100.0	100.0	100.0	100.0	112.5	112.5	45	44	44	44	44	44	44	44	44	44	44	44	44
New York	50.0	50.0	68.8	79.0	100.0	112.5	112.5	112.5	112.5	112.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	50.0	56.3	65.0	80.0	100.0	100.0	100.0	112.5	112.5	112.5	112.5	112.5	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Pittsburgh	50.0	54.4	62.5	81.3	100.0	106.3	100.0	112.5	112.5	112.5	112.5	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Portland, Oreg	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	112.5	112.5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	44	44
Providence	40.6	50.0	60.0	70.0	70.0	100.0	100.0	100.0	100.0	100.0	110.0	110.0	115.0	44	44	44	44	44	44	44	[11] 40	[35] 44	[36] 44	44	44	44
Richmond, Va	43.8	50.0	50.0	70.0	82.5	100.0	100.0	100.0	100.0	100.0	112.5	112.5	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Louis	50.0	50.0	60.0	75.0	100.0	100.0	100.0	100.0	112.5	112.5	112.5	112.5	112.5	44	44	44	44	44	44	44	44	[37] 44	44	44	44	44
St. Paul	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	100.0	100.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	44	44
Salt Lake City	62.5	62.5	75.0	81.3	100.0	100.0	112.5	112.5	112.5	112.5	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	62.5	67.5	70.0	87.5	100.0	112.5	112.5	112.5	112.5	112.5	118.8	118.8	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Seattle	62.5	62.5	75.0	87.5	100.0	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	44	44	44	44	44	44	40	40	40	40	[36] 44	44	44
Washington	45.0	50.0	62.5	87.5	100.0	100.0	100.0	112.5	112.5	112.5	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	[36] 44	44

Hod carriers

Baltimore	31.3	40.0	56.3	75.0	87.5	87.5	75.0	87.5	100.0	100.0	100.0	100.0	100.0	[38] 45	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Boston	35.0	40.0	42.5	50.0	70.0	70.0	70.0	[18] 70.0	70.0	70.0	79.0	79.0	79.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Chicago	40.0	45.0	50.0	57.5	100.0	100.0	72.5	72.5	72.5	82.5	87.5	90.0	90.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	42.5	42.5 45.0	50.0	65.0 57.5	85.0	85.0	72.5	82.5	90.0	92.5	95.0	97.5	97.5	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45
Cleveland	31.3	40.0 45.0	55.0	57.5	87.5	87.5	60.0	87.5	87.5	87.5	87.5	87.5	87.5	48	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Denver	37.5 40.6	43.8 46.9	53.1 56.3	65.6	75.0 78.1	75.0 78.1	75.0 78.1	75.0 78.1	81.3 84.4	81.3 84.4	81.3 84.4	81.3 84.4	81.3 84.4	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	40.0 42.5	42.5 45.0	47.5 50.0	55.0	72.5 75.0	67.5 70.0	67.5 70.0	72.5 75.0	82.5 87.5	82.5	82.5	87.5 92.5	87.5 100.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo	37.5	47.5	50.0	62.5	90.0	90.0	80.0	90.0	90.0	90.0	90.0	90.0	90.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Louisville	35.0 38.0	45.0	45.0	50.0	55.0	80.0	80.0	85.0	85.0	90.0	90.0	90.0	90.0	48	44	50	50	44	44	44	44	44	44	44	44	44	44	44
Memphis	30.0	37.5	50.0	50.0	75.0	62.5	62.5	62.5	75.0	62.5	62.5	62.5	62.5	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J	35.0	45.0	45.0	50.0	87.5	87.5	75.0	87.5	100.0	100.0	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	28.0							65.0	65.0	65.0	67.5	75.0	75.0	44							44	44	44	44	44	44	44	44
New York	37.5	42.5	47.0	50.0	87.5	87.5			70.0	100.0	112.5	112.5	112.5	44	44	44	44	44	44			44	44	44	44	44	44	44
Philadelphia	35.0	45.0	60.0	70.0	100.0	85.0	85.0	100.0	100.0	100.0	100.0	100.0	100.0 85.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Pittsburgh	25.0 40.0	30.0 45.0	45.0 55.0	60.0	90.0	100.0	80.0	100.0	100.0	100.0	112.5	112.5	112.5	44 49	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Portland, Oreg	50.0	50.0	62.5	75.0	93.8	90.0	90.0	100.0	100.0	100.0	100.0	100.0	100.0	48	48	48	44	44	44	44	44	44	44	44	44	44	44	44
St. Louis	42.5 45.0	47.5 50.0	46.9 55.0	62.5 65.0	70.0	85.0	85.0	100.0	115.0	115.0	115.0	115.0	115.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Paul		40.6	40.6	60.0	80.0	80.0	75.0	85.0	85.0	85.0	85.0	85.0	85.0		44	44	44	44	44	44	44	44	44	44	44	44	44	44
Salt Lake City	37.5 50.0	43.8 56.3	56.3 62.5	62.5 68.8	87.5 93.8	75.0 81.3	75.0 81.3	87.5 93.8	100.0	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	50.0	50.0	62.5	75.0	93.8	100.0	71.3	77.2	77.2	87.5	87.5	87.5	87.5	44	44	44	44	44	44	44	46½	46½	46½	44	44	44	44	44
Scranton	30.0	35.0	35.0	50.0	58.5	70.0	60.0	60.0	70.0	70.0	70.0	70.0	70.0	48	[14] 44	[14] 44	44	44	44	44	44	44	44	44	44	44	44	44

[a] 40 hours per week, Oct. 16 to Mar. 15, inclusive.
[3] 40 hours per week, November to February, inclusive.
[11] 44 hours per week, October to April, inclusive.
[14] 48 hours per week, October to April, inclusive.
[18] Old scale; strike pending.
[34] 40 hours per week, November to March, inclusive.
[35] 40 hours per week, November to April, inclusive.
[36] 40 hours per week, October to March, inclusive.
[37] 40 hours per week, Nov. 15 to Apr. 15.
[38] 44 hours per week, November to March, inclusive.
[39] 40 hours per week, January to March, June to September, and December, inclusive.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Inside wiremen

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Atlanta	----	38.9	55.0	75.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	100.0	----	54	48	44	44	44	44	44	44	44	44	44	44
Baltimore	43.8	50.0	70.0	70.0	92.5	112.5	100.0	100.0	120.0	131.3	131.3	143.8	143.8	48	48	[40] 48	44	44	44	44	44	44	44	44	44	40
Birmingham	62.5	50.0	62.5	80.0	100.0	100.0	85.0	100.0	112.5	112.5	112.5	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Boston	55.0	65.0	70.0	77.5	100.0	100.0	100.0	105.0	110.0	110.0	120.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Buffalo	45.0	62.5	70.0	70.0	90.0	90.0	90.0	100.0	112.5	112.5	125.0	125.0	137.5	48	[1] 48	44	44	44	44	44	44	44	44	44	44	44
Chicago	75.0	75.0	81.3	87.5	125.0	125.0	110.0	110.0	125.0	150.0	150.0	156.3	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	50.0	62.5	68.8	71.9	100.0	100.0	95.0	105.0	115.0	125.0	131.3	135.0	137.5	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½
Cleveland	57.5	75.0	81.3	90.0	125.0	137.5	110.0	125.0	137.5	143.8	150.0	150.0	150.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Dallas	56.3	65.0	80.0	87.5	100.0	112.5	112.5	112.5	112.5	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Denver	56.3	62.5	82.5	82.5	100.0	100.0	100.0	112.5	112.5	125.0	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	46.9	66.9	75.0	93.8	125.0	100.0	100.0	100.0	125.0	130.0	140.0	150.0	150.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Fall River	37.5	50.0	60.0	70.0	85.0	90.0	85.0	95.0	95.0	95.0	95.0	95.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	47.5	57.0	67.5	72.0	100.0	100.0	100.0	110.0	115.0	125.0	125.0	137.5	150.0	[21] 48	44	44	44	44	44	44	44	44	44	44	44	44
Jacksonville	45.0	45.0	65.0	85.0	100.0	100.0	85.0	85.0	85.0	100.0	125.0	125.0	125.0	48	48	48	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo	62.5	68.8	75.0	87.5	100.0	100.0	100.0	106.3	125.0	125.0	125.0	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Little Rock	50.0	50.0	55.0	75.0	87.5	87.5	87.5	87.5	87.5	87.5	87.5	87.5	87.5	48	[41] 48	[41] 48	[41] 48	44	44	44	44	44	44	44	44	44
Los Angeles	50.0	50.0	62.5	80.0	100.0	100.0	100.0	112.5	112.5	112.5	112.5	112.5	100.0	48	48	48	44	44	44	44	44	44	44	44	44	44
Louisville	40.0	45.0	50.0	75.0	75.0	100.0	90.0	100.0	100.0	106.3	106.3	115.0	125.0	48	48	48	44	44	44	44	44	44	44	44	44	44
Manchester	31.3	42.5	60.0	75.0	100.0	100.0	80.0	100.0	100.0	100.0	100.0	100.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Memphis	45.0	56.3	62.5	75.0	100.0	100.0	87.5	87.5	87.5	100.0	100.0	100.0	112.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Milwaukee	45.0	56.3	56.3	75.0	85.0	100.0	100.0	100.0	112.5	112.5	112.5	112.5	120.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Minneapolis	50.0	56.3	68.8	68.8	81.3	100.0	87.5	87.5	100.0	100.0	100.0	100.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J.	56.3	62.5	68.8	75.0	100.0	112.5	112.5	112.5	131.3	131.3	150.0	156.3	156.3	44	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	----	60.0	60.0	75.0	82.5	93.8	85.0	90.8	100.0	100.0	100.0	100.0	106.3	----	44	44	44	44	44	44	44	44	44	44	44	44
New Orleans	45.0	50.0	56.3	70.0	90.0	100.0	100.0	90.0	105.0	110.0	110.0	120.0	125.0	48	48	48	48	44	44	44	44	44	44	44	44	44
New York	56.3	65.0	65.0	75.0	112.5	112.5	112.5	112.5	131.3	131.3	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Omaha	50.0	57.5	70.0	87.5	112.5	112.5	100.0	112.5	112.5	112.5	112.5	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	45.0	56.3	65.0	75.0	100.0	112.5	90.0	100.0	112.5	112.5	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	[67] 44	[67] 44	[67] 44
Pittsburgh	57.5	62.5	68.8	75.0	100.0	125.0	112.5	125.0	125.0	143.8	143.8	150.0	156.3	48	44	44	44	44	44	44	44	44	44	44	44	44
Portland, Oreg.	56.3	56.3	72.2	80.0	100.0	100.0	90.0	100.0	112.5	112.5	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	40	40	40
Providence	43.8	55.0	60.0	70.0	85.0	115.0	90.0	90.0	100.0	100.0	100.0	110.0	110.0	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Louis	65.0	75.0	75.0	87.5	100.0	125.0	125.0	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	40
St. Paul	46.9	62.5	68.8	68.8	81.3	100.0	80.0	80.0	100.0	87.5	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Salt Lake City	----	----	----	----	----	----	----	----	----	----	----	----	112.5	----	----	----	----	----	----	----	----	----	----	----	----	44

St. Paul	46.9	62.5	68.8	68.8	81.3	100.0	80.0	80.0	100.0	87.5	100.0	100.0	100.0 112.5	44	44	44	44	44	44	44	44	44	44	44	44 44
Salt Lake City																									
San Francisco	62.5	75.0	75.0	87.5	112.5	125.0	100.0	100.0	100.0	100.0	106.3	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44
Scranton	46.9	60.0	62.5	75.0	95.0	87.5	87.5	87.5	112.5	112.5	112.5	112.5	112.5	48	44	44	44	44	44	44	44	44	44	44	44
Seattle	62.5	75.0	87.5	100.0	112.5	112.5	100.0	106.3	112.5	112.5	125.0	125.0	125.0	44	44	44	40	40	40	40	40	40	40	40	40
Washington	55.0	60.0	75.0	100.0	100.0	106.3	106.3	112.5	125.0	137.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	40

Painters

Atlanta	33.3	36.1	50.0	60.0	60.0	85.0	75.0	75.0	75.0	75.0	80.0	85.0	85.0	[7] 53	[7] 53	48	44	44	44	44	44	44	44	44	44
Baltimore	37.5	43.8	56.3	68.8	90.0	90.0	80.0	80.0	90.0	100.0	100.0	100.0	100.0	48	48	44	44	44	44	44	44	44	44	44	40
Birmingham	45.0	50.0	62.5	75.0	87.5	87.5	75.0	87.5	87.5	100.0	100.0	112.5	100.0	48	44	44	44	44	44	44	44	44	44	44	44
Boston	50.0	62.5	75.0	82.5	100.0	100.0	100.0	105.0	110.0	110.0	125.0	125.0	125.0	44	40	40	40	40	40	40	40	40	40	40	40
Buffalo	43.8	50.0	56.3	62.5	87.5	87.5	87.5	87.5	87.5	100.0	100.0	112.5	112.5	48	[1] 48	[66] 48	[66] 48	[66] 48	[66] 48	[66] 48	[66] 48	44	44	44	44
Charleston, S.C	25.0	25.0	{31.3 50.0	50.0 65.0	65.0 80.0	65.0 80.0	50.0 65.0	55.0 65.0	55.0	55.0	55.0	55.0	55.0	48	48	48	48	48	44	44	44	44	44	44	44
Chicago	65.0	72.5	75.0	87.5	125.0	125.0	110.0	125.0	125.0	150.0	150.0	150.0	162.5	44	44	44	44	44	44	44	44	44	44	44	40
Cincinnati	50.0	55.0	60.0	62.5	87.5	100.0	87.5	97.5	107.5	117.5	125.0	131.3	131.3	44	44	44	44	44	44	44	44	44	44	40	40
Cleveland	50.0	55.0	67.5	75.0	112.5	112.5	100.0	112.5	125.0	125.0	[18]125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44
Dallas	50.0	60.0	70.0	87.5	100.0	100.0	87.5	100.0	100.0	100.0	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44
Denver	50.0	62.5	68.8	85.0	100.0	112.5	100.0	100.0	112.5	117.5	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	40	40
Detroit	45.0	60.0	70.0	80.0	100.0	100.0	90.0	100.0	112.5	112.5	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44
Fall River	37.5	41.0	55.0	62.5	100.0	100.0	75.0	90.0	90.0	90.0	90.0	90.0	90.0	44	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	47.5	55.0	55.0	70.0	100.0	100.0	90.0	97.5	105.0	105.0	110.0	115.0	122.5	44	44	44	44	44	44	44	44	44	44	44	44
Jacksonville	37.5	45.0	50.0	75.0	87.5	75.0	75.0	75.0	-------	75.0	100.0	100.0	75.0	48	48	48	44	44	44	44	44	-----	44	44	44
Kansas City, Mo	60.0	60.0	70.0	82.5	100.0	100.0	100.0	100.0	112.5	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44
Little Rock	50.0	55.0	60.0	80.0	100.0	100.0	87.5	87.5	87.5	100.0	100.0	100.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44
Los Amgeles	43.8	50.0	56.3	75.0	87.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	48	48	44	44	44	44	44	44	44	44	44	44
Louisville	45.0	50.0	50.0	62.5	75.0	87.5	87.5	100.0	112.5	112.5	112.5	112.5	112.5	48	48	48	44	44	44	44	44	44	44	44	44
Manchester	------	37.5	50.0	62.5	80.0	80.0	70.0	80.0	90.0	90.0	90.0	90.0	90.0	-----	48	44	44	44	44	44	44	44	44	44	44
Memphis	50.0	60.0	62.5	75.0	100.0	100.0	87.5	87.5	100.0	100.0	100.0	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44
Milwaukee	50.0	55.0	60.0	70.0	85.0	85.0	85.0	100.0	100.0	100.0	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44
Minneapolis	50.0	55.0	62.5	70.0	100.0	100.0	80.0	90.0	90.0	100.0	90.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J.	44.0	50.0	62.5	75.0	100.0	100.0	100.0	112.5	125.0	125.0	137.5	137.5	150.0	44	44	44	44	44	44	44	44	[67] 44	40	40	40
New Haven	40.9	45.5	53.1	62.5	87.5	100.0	100.0	90.0	100.0	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44
New Orleans	40.0	40.0	50.0	65.0	75.0	90.0	80.0	80.0	85.0	85.0	85.0	90.0	90.0	48	48	48	44	44	44	44	44	44	44	44	44
New York	50.0	62.5	62.5	75.0	112.5	112.5	112.5	112.5	131.3	131.3	150.0	{175.0 150.0	150.0	44	44	44	44	40	40	40	40	40	40	40	40
Omaha	50.0	62.5	62.5	75.0	100.0	101.3	90.0	112.5	100.0	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	42.5	45.0	60.0	75.0	100.0	100.0	100.0	100.0	100.0	100.0	[18]100.0	105.0	105.0	44	44	44	44	40	40	44	44	44	44	44	44
Pittsburgh	55.0	65.0	67.5	87.5	112.5	112.5	100.0	125.0	137.5	143.8	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44

[1] 44 hours per week, June to August, inclusive.
[7] Work 53 hours, paid for 54.
[18] Old scale; strike pending.
[21] 44 hours per week, June to September, inclusive.
[40] 44 hours per week, August to December, inclusive.
[41] 44 hours per week, July to September, inclusive.
[66] 44 hours per week, July to March, inclusive.
[67] 40 hours per week, June to August, inclusive.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Painters—Continued

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Portland, Oreg.	50.0	50.0	70.0	90.0	100.0	90.0	90.0	100.0	100.0	100.0	112.5	112.5	105.0	48	44	44	44	44	44	44	44	44	40	40	40	40
Providence	45.5	50.0	62.5	62.5	90.0	90.0	80.0	90.0	100.0	100.0	106.3	106.3	106.3	44	44	44	44	44	44	44	44	44	44	44	44	44
Richmond, Va.	37.5	37.5	50.0	60.0	65.0	75.0	67.5	80.0	80.0	80.0	80.0	80.0	80.0	48	48	48	48	48	48	48	48	48	48	48	44	44
St. Louis	57.0	62.5	75.0	75.0	100.0	125.0	100.0	112.5	130.0	130.0	135.0	143.8	143.8	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Paul	50.0	55.0	62.5	70.0	100.0	100.0	80.0	90.0	90.0	90.0	95.0	95.0	95.0	44	[8]44	44	44	44	44	44	44	44	44	44	44	44
Salt Lake City	56.3	75.0	75.0	90.0	100.0	100.0	90.0	100.0	100.0	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	56.3	62.5	75.0	87.5	106.3	106.3	100.0	104.4	104.4	104.4	{100.0 / 104.4}	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Scranton	40.0	50.0	50.0	65.0	87.5	87.5	87.5	87.5	100.0	112.5	112.5	112.5	112.5	48	44	44	44	44	44	44	44	40	40	40	40	40
Seattle	56.3	65.0	75.0	90.0	100.0	93.8	93.8	100.0	105.0	112.5	112.5	112.5	112.5	44	44	40	40	40	40	40	40	40	40	40	40	40
Washington	50.0	56.3	75.0	75.0	90.0	100.0	100.0	112.5	112.5	118.8	118.8	118.8	121.9	44	44	44	44	44	44	44	44	44	44	44	44	44

Plasterers

Atlanta	45.0	45.0	50.0	60.0	100.0	100.0	100.0	100.0	100.0	100.0	125.0	125.0	125.0	53	53	49½	49½	44	44	44	44	44	44	44	44	44
Baltimore	62.5	68.8	72.0	87.5	112.5	125.0	125.0	150.0	175.0	175.0	175.0	175.0	175.0	44	44	44	44	44	44	44	44	44	44	44	40	40
Birmingham	62.5	62.5	62.5	75.0	75.0	100.0	100.0	100.0	125.0	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Boston	65.0	70.0	70.0	80.0	100.0	125.0	112.5	112.5	125.0	125.0	150.0	150.0	150.0	44	40	40	40	40	40	40	40	40	40	40	40	40
Buffalo	60.0	65.0	70.0	85.0	100.0	100.0	100.0	150.0	150.0	150.0	150.0	150.0	150.0	48	44	44	44	[68]40	40	40	40	40	40	40	40	40
Charleston, S. C.	40.0	40.0	50.6	75.0	100.0	85.0	85.0	100.0	100.0	100.0	100.0	100.0	100.0	[7]53	[7]53	48	48	48	48	48	{44 / 48}	48	44	44	44	44
Chicago	75.0	75.0	81.3	87.5	125.0	125.0	110.0	150.0	150.0	150.0	[18]150.0	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	68.8	75.0	75.0	87.5	100.0	112.5	112.5	125.0	150.0	150.0	150.0	150.0	150.0	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½	44½
Cleveland	62.5	75.0	85.0	90.0	125.0	125.0	125.0	125.0	125.0	156.3	162.5	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Dallas	75.0	87.5	100.0	112.5	112.5	150.0	137.5	150.0	162.5	162.5	162.5	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Denver	75.0	87.5	87.5	87.5	125.0	125.0	125.0	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	68.8	75.0	75.0	87.5	125.0	125.0	112.5	150.0	156.3	156.3	156.3	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Fall River	55.0	65.0	75.0	85.0	115.0	115.0	95.0	110.0	110.0	125.0	125.0	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	62.5	72.0	75.0	87.5	100.0	112.5	112.5	131.3	150.0	150.0	150.0	155.0	157.5	44½	44½	44½	44½	44	44	44	44	44	44	44	44	44
Jacksonville	56.3	56.3	68.8	75.0	87.5	87.5	87.5	100.0	125.0	125.0	175.0	175.0	125.0	48	48	44	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo.	75.0	75.0	87.5	100.0	120.0	120.0	112.5	137.5	150.0	150.0	150.0	150.0	150.0	44	44	44	-----	44	44	44	44	44	44	44	44	44
Little Rock	62.5	75.0	75.0	87.5	112.5	112.5	112.5	112.5	150.0	150.0	150.0	150.0	150.0	48	[22]44	[22]44	[22]44	44	44	44	44	44	44	44	44	44
Los Angeles	75.0	62.5	75.0	87.5	112.5	125.0	125.0	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	40	40	44	44	44	44	44	44
Louisville	65.0	65.0	70.0	75.0	100.0	112.5	112.5	150.0	150.0	150.0	162.5	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Manchester	50.0	60.0	75.0	90.0	112.5	112.5	112.5	112.5	150.0	137.5	137.5	137.5	137.5	48	44	44	44	44	44	44	44	44	44	44	44	44

Los Angeles	75.0	62.5	75.0	87.5	112.5	125.0	125.0	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	40	40	44	44	44	44	44	44
Louisville	65.0	65.0	70.0	75.0	100.0	112.5	112.5	150.0	150.0	150.0	162.5	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Manchester	50.0	60.0	75.0	90.0	112.5	112.5	112.5	112.5	150.0	137.5	137.5	137.5	137.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Memphis	75.0	75.0	87.5	87.5	100.0	112.5	112.5	112.5	137.5	156.3	156.3	156.3	156.3	44	44	44	44	44	44	44	44	44	44	44	44	44
Milwaukee	65.0	65.0	70.0	87.5	87.5	112.5	112.5	112.5	125.0	137.5	137.5	143.8	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Minneapolis	70.0	75.0	75.0	90.0	112.5	125.0	100.0	112.5	125.0	125.0	137.5	137.5	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J.	65.0	75.0	75.0	87.5	125.0	125.0	125.0	125.0	150.0	150.0	162.5	175.0	175.0	44	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	60.0	65.0	70.0	82.5	100.0	100.0	100.0	112.5	125.0	125.0	137.5	137.5	143.8	44	44	44	44	44	44	44	44	44	44	44	44	44
New Orleans	62.5	62.5	62.5	75.0	100.0	100.0	100.0	100.0	125.0	125.0	125.0	125.0	125.0	48	45	45	45	45	45	45	45	45	44	45	44	45
New York	68.8	75.0	75.0	93.8	110.8	125.0	125.0	125.0	150.0	150.0	175.0	175.0	175.0	44	44	44	44	44	44	44	44	44	44	40	40	40
Omaha	75.0	75.0	80.0	87.5	112.5	125.0	125.0	125.0	137.5	137.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	62.5	70.0	75.0	80.0	125.0	125.0	125.0	125.0	150.0	150.0	175.0	175.0	175.0	44	40	40	40	40	40	40	40	40	40	40	40	40
Pittsburgh	62.5	75.0	75.0	85.0	115.0	125.0	112.5	137.5	156.3	156.3	166.3	166.3	166.3	44	44	44	44	44	44	44	44	44	44	40	40	40
Portland, Oreg	75.0	75.0	87.5	110.0	112.5	112.5	112.5	125.0	125.0	137.5	137.5	137.5	150.0	44	44	44	44	44	44	44	44	44	44	40	40	40
Providence	62.5	68.8	80.0	100.0	115.0	105.0	105.0	115.0	125.0	150.0	150.0	150.0	150.0	44	40	40	40	40	40	40	40	40	40	40	40	40
Richmond, Va.	37.5	-----	-----	62.5	75.0	87.5	87.5	125.0	125.0	125.0	125.0	125.0	125.0	48	-----	-----	44	44	44	44	44	44	44	44	44	44
St. Louis	75.0	75.0	87.5	100.0	125.0	137.5	137.5	150.0	175.0	175.0	175.0	175.0	175.0	44	44	44	44	44	44	44	44	44	44	44	44	40
St. Paul	62.5	70.0	75.0	90.0	112.5	100.0	100.0	112.5	125.0	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Salt Lake City	75.0	87.5	87.5	100.0	125.0	112.5	112.5	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	87.5	87.5	100.0	112.5	125.0	137.5	127.5	127.5	127.5	150.0	150.0	150.0	150.0	44	40	40	40	40	40	44	44	44	44	44	44	44
Scranton	55.0	65.0	70.0	80.0	100.0	150.0	125.0	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	40
Seattle	75.0	87.5	100.0	112.5	125.0	125.0	112.5	125.0	137.5	137.5	137.5	137.5	150.0	44	40	40	40	40	40	40	40	40	40	40	40	40
Washington	62.5	70.0	70.0	87.5	100.0	125.0	125.0	150.0	150.0	162.5	162.5	162.5	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44

Plasterers' laborers

Baltimore	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	100.0	100.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	40	40
Birmingham	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	50.0	50.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	44	44
Boston	40.0 41.5	45.0	50.0	60.0	80.0	80.0	80.0	95.0	95.0	95.0	95.0	105.0	105.0	44	40	40	40	40	40	40	40	40	40	40	40
Chicago	48.0	50.0	56.3	62.5	106.3	106.3	78.8	78.8	78.8	88.8	93.8	96.8	96.8	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	45.0	45.0	50.0	65.0	85.0	85.0	72.5	82.5	90.0	92.5	95.0	97.5	97.5	45	45	45	45	45	45	45	45	45	45	45	45
Cleveland	35.0	45.0	55.0	57.5	87.5	87.5	60.0	87.5	87.5	87.5	87.5	87.5	87.5	48	44	44	44	44	44	44	44	44	44	44	44
Denver	43.8	43.8	59.4	68.8	81.3	81.3	81.3	81.3	87.5	87.5	87.5	87.5	87.5	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	37.5	50.0	50.0	75.0	100.0	75.0	75.0	100.0	100.0	87.5	87.5	87.5	87.5	44	44	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo	37.5	50.0	55.0	68.8	90.0	90.0	80.0	90.0	90.0	90.0	90.0	90.0	90.0	44	44	44	44	44	44	44	44	44	44	44	44
Los Angeles	61.4	50.0	62.5	75.0	100.0	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44
Louisville	38.0	45.0	45.0	55.0	55.0	80.0	80.0	85.0	85.0	90.0	90.0	90.0	90.0	44	44	44	44	44	40	40	44	44	44	44	44
Memphis	32.5	-----	50.0	50.0	75.0	62.0	62.5	62.5	75.0	75.0	75.0	75.0	75.0	44	-----	44	44	44	44	44	44	44	44	44	44

[7] Work 53 hours; paid for 54.
[18] Old scale; strike pending.
[22] 48 hours per week, October to March, inclusive.
[68] 44 hours per week, Nov. 14 to May 14.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Plasterers' laborers—Continued

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Milwaukee	32.5	42.9	50.0	55.0	70.0	85.0	75.0	75.0	85.0	90.0	90.0	90.0	90.0	48	48	48	[12] 44	44	44	44	44	44	44	44	44	44
Minneapolis	40.6	50.0	55.0	60.0	85.0	85.0	75.0	85.0	85.0	85.0	90.0	90.0	95.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J.	-----	45.0	45.0	50.0	87.5	87.5	75.0	87.5	100.0	100.0	112.5	112.5	112.5	-----	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	85.0	85.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	44	44
New Orleans	22.5	28.3	28.3	35.0 45.0	50.0 65.0	50.0	50.0	65.0	75.0	75.0	75.0	75.0	75.0	48	45	45	45	45	45	45	45	45	45	45	44	45
New York	40.6	46.9	56.3	62.5	87.5	93.8	93.8	106.3	106.3	106.3	121.9 125.0	121.9 125.0	121.9 125.0	44	44	44	44	44	44	44	44	44	44	40	40	40
Philadelphia	43.8	46.9	50.0	62.5	110.0	110.0	100.0	100.0	112.5	112.5	112.5	112.5	112.5	44	40	44	44	44	44	44	44	44	44	44	44	44
Pittsburgh	40.0	45.0	55.0	60.0	90.0	100.0	80.0	100.0	100.0	100.0	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Portland, Oreg.	50.0	50.0	62.5	75.0	93.8	90.0	90.0	100.0	100.0	100.0	112.5	112.5	112.5	48	48	48	44	44	44	44	44	44	44	40	40	40
St. Louis	[7]56.3	56.3	62.5	75.0	87.5	100.0	100.0	112.5	125.0	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	40
Salt Lake City	56.3	62.5	68.8	75.0	100.0	87.5	87.5	100.0	125.0	125.0	125.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	62.5	62.5	68.8	87.5	106.3	112.5	95.0	83.2	83.2	100.0	100.0	100.0	100.0	44	44	44	44	40	40	46½	46½	46½	44	44	44	44
Scranton	-----	35.0	35.0	50.0	58.5	70.0	60.0	60.0	70.0	70.0	70.0	70.0	70.0	-----	44	44	44	44	44	44	44	44	44	44	44	44
Seattle	50.0	62.5	75.0	87.5	87.5	87.5	87.5	93.8	100.0	100.0	100.0	100.0	100.0	44	44	44	40	40	40	40	40	40	40	40	40	40

Plumbers

Atlanta	44.4	44.4	68.8	75.0	75.0	75.0	100.0	100.0	112.5	112.5	125.0	125.0	125.0	[7] 53	[7] 53	44	44	44	44	44	44	44	44	44	44	44
Baltimore	50.0	56.3	68.8	75.0	87.5	100.0	93.8	100.0	118.8	125.0	125.0	125.0	131.3	48	44	44	44	44	44	44	44	44	44	44	44	40
Birmingham	68.8	75.0	87.5	112.5	150.0	150.0	125.0	150.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Boston	60.0	68.8	75.0	80.0	100.0	100.0	100.0	105.0	112.5	110.0	125.0	125.0	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Buffalo	56.3	62.5	68.8	75.0	100.0	100.0	100.0	100.0	112.5	118.8	137.5	137.5	137.5	48	[1] 48	44	44	44	44	44	44	44	44	44	44	44
Charleston, S.C.	-----	50.0	59.0	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-----	48	48	48	44	44	44	44	44	44	44	44	44
Chicago	75.0	75.0	75.0	84.4	125.0	125.0	110.0	110.0	125.0	125.0	150.0	150.0	162.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	61.8	65.6	65.5	75.0	100.0	100.0	100.0	112.5	125.0	125.0	135.0	137.5	137.5	44½	44	44	44	44	44	44	44	44	44	44	44	44
Cleveland	62.5	75.0	81.3	90.0	100.0	137.5	110.0	131.3	137.5	137.5	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Dallas	68.8	81.3	87.5	100.0	125.0	137.5	125.0	125.0	137.5	137.5	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Denver	62.5	75.0	87.5	87.5	100.0	106.3	106.3	118.8	118.8	125.0	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	56.3	68.8	75.0	90.0	125.0	100.0	100.0	125.0	130.0	130.0	140.0	150.0	150.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Fall River	43.8	50.0	56.3	67.5	100.0	100.0	85.0	100.0	100.0	100.0	100.0	100.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	62.5	67.5	75.0	87.5	100.0	125.0	115.0	122.5	130.0	135.0	135.0	142.5	142.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Jacksonville	62.5	62.5	75.0	80.0	93.8	112.5	100.0	112.5	125.0	125.0	150.0	162.5	137.5	48	48	44	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo.	62.5	75.0	87.5	100.0	100.0	125.0	112.5	125.0	137.5	137.5	137.5	137.5	137.5	48	44	44	44	44	44	44	44	44	44	44	44	44

Kansas City, Mo	62.5	75.0	87.5	100.0	100.0	125.0	112.5	125.0	137.5	137.5	137.5	137.5	137.5	48	44	44	44	44	44	44	44	44	44	44	44
Little Rock	56.3	68.8	75.0	87.5	125.0	112.5	100.00	100.0	112.5	112.5	112.5	112.5	112.5	[21] 48	44	44	44	44	44	44	44	44	44	44	44
Los Angeles	56.3	62.5	68.8	81.3	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	48	48	48	44	44	44	44	44	44	44	44	44
Louisville	60.0	60.0	70.0	70.0	80.0	100.0	100.0	112.5	112.5	137.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44
Manchester	31.3	47.7	50.0	70.0	100.0	90.0	80.0	100.0	100.0	100.0	100.0	100.0	105.0	48	44	44	44	44	44	44	44	44	44	44	44
Memphis	62.5	62.5	81.3	93.8	125.0	125.0	112.5	125.0	125.0	131.3	135.0	142.5	142.0	48	48	48	44	44	44	44	44	44	44	44	44
Milwaukee	62.5	62.5	68.8	75.0	87.5	100.0	90.0	100.0	112.5	112.5	118.8	118.8	118.8	44	44	44	44	44	44	44	44	44	44	44	44
Minneapolis	56.3	62.5	68.8	75.0	100.0	100.0	87.5	100.0	100.0	100.0	112.5	112.5	112.5	48	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J.	62.5	62.5	75.0	87.5	112.5	112.5	112.5	112.5	131.3	137.5	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	50.0	54.5	62.5	75.0	87.5	100.0	87.5	100.0	106.3	106.3	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44
New Orleans	56.3	56.3	68.8	80.0	90.0	100.0	90.0	90.0	105.0	112.5	125.0	125.0	125.0	48	48	48	48	48	44	44	44	44	44	44	44
New York	68.8	68.8	75.0	75.0	112.5	112.5	112.5	125.0	137.5	137.5	{137.5 150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44
Omaha	68.3	75.0	75.0	87.5	125.0	125.0	100.0	125.0	125.0	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	{43.8 50.0	56.3	62.5	80.0	90.0	115.0	90.0	115.0	115.0	115.0	115.0	115.0	115.0	44	44	44	44	44	44	44	44	44	44	44	44
Pittsburgh	62.5	75.0	75.0	93.8	106.3	125.0	112.5	115.6	137.5	143.8	150.0	150.0	156.3	44	44	44	44	44	44	44	44	44	44	44	44
Portland, Oreg.	75.0	75.0	81.3	100.0	112.5	112.5	106.3	112.5	125.0	125.0	125.0	137.5	137.5	44	44	44	44	44	44	44	44	44	40	40	40
Providence	56.3	62.5	75.0	75.0	100.0	100.0	100.0	100.0	112.5	125.0	125.0	127.5	127.5	44	44	44	44	44	44	44	44	44	44	44	44
St. Louis	66.3	75.0	81.3	100.0	125.0	125.0	125.0	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44
St. Paul	62.5	62.5	68.8	75.0	87.5	100.0	100.0	100.0	100.0	100.0	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44
Salt Lake City	75.0	75.0	87.5	100.0	112.5	100.0	100.0	112.5	112.5	120.0	120.0	120.0	120.0	44	44	44	44	44	44	44	44	44	44	44	44
Scranton	50.0	53.8	62.5	75.0	87.5	87.5	87.5	93.8	112.5	112.5	118.8	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44
Seattle	81.3	81.3	90.0	100.0	112.5	112.5	100.0	112.5	125.0	125.0	125.0	137.5	137.5	44	44	44	40	40	40	40	40	40	40	40	40
Washington	50.0	56.3	75.0	87.5	100.0	100.0	106.3	125.0	125.0	131.3	137.5	137.5	137.5	48	44	44	44	44	44	44	44	44	44	44	44

Sheet-metal workers

Baltimore	40.0	45.8	62.5	80.0	80.0	90.0	90.0	90.0	100.0	120.0	120.0	131.3	131.3	48	48	44	44	44	44	44	44	44	44	44	40
Birmingham	55.0	50.0	65.0	75.0	100.0	100.0	85.0	85.0	100.0	100.0	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44
Boston	55.0	60.0	70.0	80.0	100.0	100.0	100.0	105.0	110.0	110.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44
Buffalo	45.0	50.0	56.3	62.5	87.5	87.5	87.5	100.0	110.0	110.0	111.0	110.0	115.0	48	[1] 48	[1] 48	44	44	44	44	44	44	44	44	44
Chicago	65.0	70.0	70.0	75.0	125.0	125.0	110.0	110.0	125.0	137.5	137.5	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	45.0	50.0	52.5	56.0	70.0	80.0	80.0	90.0	100.0	110.0	116.3	120.0	122.5	44	48	48	48	48	48	48	48	48	48	48	48
Cleveland	45.0	60.0	80.0	85.0	125.0	125.0	104.0	125.0	125.0	125.0	125.0	137.5	137.5	48	44	44	44	44	44	44	44	44	44	44	44
Dallas	50.0	68.8	75.0	87.5	100.0	100.0	100.0	112.5	115.6	125.0	125.0	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44
Denver	56.3	62.5	75.0	87.5	100.0	100.0	100.0	112.5	112.5	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	40.0	60.0	70.0	80.0	125.0	100.0	100.0	112.5	112.5	112.5	125.0	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44

[1] 44 hours per week, June to August, inclusive.
[7] Work 53 hours, paid for 54.
[12] 48 hours per week, November to April, inclusive.
[21] 44 hours per week, June to September, inclusive.
[70] For helpers.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Sheet-metal workers—Continued

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Indianapolis	47.5	57.0	60.0	60.0	100.0	100.0	92.5	97.5	105.0	105.0	107.5	115.0	122.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo.	57.5	62.5	67.5	70.0	100.0	100.0	100.0	100.0	112.5	112.5	112.5	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Little Rock	50.0	60.0	65.0	80.0	100.0	100.0	90.0	90.0	100.0	90.0	90.0	90.0	90.0	48	48	48	[41] 48	44	44	44	44	44	44	44	44	44
Los Angeles	56.3	56.3	68.5	68.5	100.0	112.5	112.5	112.5	112.5	112.5	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Louisville	40.0	47.5	50.0	65.0	80.0	80.0	80.0	90.0	100.0	100.0	100.0	100.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Manchester	34.4	34.4	37.5	44.3	100.0	90.0	80.0	90.0	90.0	100.0	100.0	100.0	100.0	48	48	44	44	44	44	44	44	44	44	44	44	44
Memphis	45.0	53.1	62.5	75.0	100.0	100.0	87.5	87.5	105.0	112.5	112.5	112.5	112.5	48	48	48	44	44	44	44	44	44	44	44	44	44
Milwaukee	42.5	52.5	60.0	60.0	67.5	100.0	85.0	85.0	100.0	100.0	100.0	100.0	100.0	48	[1] 48	[1] 48	[1] 48	44	44	44	44	44	44	44	44	44
Minneapolis	50.0	50.0	56.3	70.0	100.0	100.0	90.0	90.0	90.0	90.0	100.0	100.0	100.0	48	48	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J.	60.0	62.5	75.0	87.5	100.0	112.5	112.5	112.5	131.3	137.5	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	47.7	54.5	59.1	75.0	87.5	100.0	87.5	100.0	106.3	106.3	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
New Orleans	------	45.0	68.8	80.0	100.0	100.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	-----	44	44	44	44	44	44	44	44	44	44	44	44
New York	59.4	62.5	70.0	75.0	112.5	112.5	112.5	112.5	131.3	131.3	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Omaha	42.5	50.0	68.0	75.0	112.5	112.5	100.0	100.0	100.0	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	50.0	56.3	70.0	75.0	110.0	100.0	90.0	100.0	112.5	112.5	112.5	118.8	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Pittsburgh	55.0	60.0	70.0	80.0	90.0	112.5	100.0	117.5	131.3	143.8	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Portland, Oreg.	56.3	65.6	82.5	86.0	100.0	100.0	90.0	100.0	106.3	------	------	112.5	118.8	44	44	44	44	44	44	44	44	-----	-----	-----	40	40
Providence	46.0	52.0	57.0	65.0	100.0	100.0	87.5	95.0	100.0	110.0	110.0	110.0	110.0	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Louis	60.0	62.5	65.0	75.0	85.0	125.0	100.0	125.0	137.5	137.5	137.5	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Paul	50.0	50.0	56.3	70.0	100.0	100.0	90.0	90.0	90.0	90.0	100.0	100.0	100.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Salt Lake City	57.5	62.5	62.5	87.5	100.0	90.0	90.0	100.0	100.0	100.0	100.0	100.0	100.0	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	68.8	75.0	82.5	100.0	112.5	125.0	106.3	106.3	106.3	106.3	106.3	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Scranton	43.8	50.3	56.3	75.0	87.5	87.5	87.5	93.8	112.5	112.5	118.8	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Seattle	56.3	68.8	82.5	90.0	100.0	100.0	93.8	100.0	106.3	------	------	125.0	125.0	44	44	44	44	44	44	44	44	44	-----	-----	40	40
Washington	50.0	56.3	70.0	75.0	92.5	100.0	100.0	106.3	120.0	125.0	131.3	137.5	137.5	44	44½	44	44	44	44	44	44	44	44	44	44	44
Stonecutters																										
Baltimore	50.0	56.3	56.3	75.0	100.0	100.0	90.0	100.0	112.5	125.0	125.0	125.0	125.0	44½	44	44	44	44	44	44	44	44	44	44	44	44
Boston	56.3	62.5	70.0	70.0	100.0	100.0	100.0	110.0	110.0	110.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Buffalo	56.3	62.5	62.5	75.0	100.0	100.0	100.0	100.0	120.0	125.0	125.0	135.0	137.5	48	44	44	44	44	44	44	44	44	44	44	44	44
Chicago	62.5	70.0	70.0	81.3	125.0	125.0	102.5	102.5	125.0	137.5	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	56.3	65.0	70.0	77.5	115.0	125.0	125.0	125.0	125.0	125.0	132.5	150.0	150.0	44½	44	44	44	44	44	44	44	44	44	44	44	44

Cleveland	60.0	70.0	77.5	80.0	112.5	125.0	110.0	125.0	125.0	135.0	135.0	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Dallas	62.5	75.0	75.0	87.5	100.0	125.0	125.0	125.0	125.0	137.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Denver	62.5	62.5	75.0	87.5	100.0	112.5	100.0	112.5	112.5	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	62.5	70.0	70.0	80.0	125.0	112.5	112.5	125.0	125.0	137.5	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	56.3	62.5	62.5	75.0	100.0	100.0	100.0	100.0	100.0	112.5	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Kansas City, Mo	56.3	62.5	62.5	75.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Little Rock	55.0	55.0	60.0	65.0	100.0	100.0	80.0	87.5	112.5	80.0	------	125.0	125.0	44	44	44	44	44	44	44	44	44	44	-----	44	44	44
Louisville	56.3	60.0	60.0	75.0	100.0	100.0	100.0	100.0	112.5	112.5	112.5	112.5	115.0	48	44	44	44	44	44	44	44	44	44	44	44	44	44
Memphis	65.0	65.0	75.0	75.0	100.0	112.5	112.5	125.0	125.0	125.0	137.5	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Milwaukee	50.0	62.5	------	------	100.0	90.0	90.0	106.3	112.5	112.5	125.0	125.0	125.0	44	44	-----	-----	44	44	44	44	44	44	44	44	44	44
Minneapolis	56.3	62.5	62.5	75.0	87.5	112.5	100.0	112.5	112.5	125.0	125.0	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J	68.8	68.8	68.8	84.4	112.5	112.5	112.5	125.0	131.3	137.5	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	47.7	54.5	59.1	75.0	87.5	100.0	87.5	100.0	106.3	106.3	------	125.0	125.0	44	44	44	44	44	44	44	44	44	44	-----	44	44	44
New Orleans	------	------	------	------	------	125.0	125.0	125.0	125.0	125.0	125.0	125.0	125.0	-----	-----	-----	-----	-----	44	44	44	44	44	44	44	44	44
New York	68.8	68.8	68.8	84.4	100.0	112.5	112.5	125.0 112.5	131.3	137.5	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	50.0	65.0	65.0	82.5	135.0	135.0	100.0	112.5	125.0	125.0	131.3	131.3	131.3	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Richmond, Va.	54.5	54.5	62.5	75.0	87.5	100.0	100.0	100.0	112.5	112.5	112.5	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Louis	56.3	62.5	70.0	85.0	100.0	100.0	100.0	112.5	125.0	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Paul	56.3	62.5	62.5	75.0	87.5	112.5	100.0	112.5	112.5	125.0	125.0	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	------	------	------	------	------	------	------	------	------	112.5	112.5	112.5	112.5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	44	44	44	40
Scranton	50.0	50.0	56.3	60.0	90.0	100.0	100.0	100.0	112.5	125.0	125.0	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44	44	40
Washington	54.0	56.3	65.0	87.5	100.0	100.0	100.0	112.5	112.5	------	------	125.0	125.0	44	44	44	44	44	44	44	44	44	44	-----	-----	44	44

Structural-iron workers

Atlanta	62.5	62.5	75.0	80.0	95.0	95.0	------	80.0	100.0	112.5	125.0	125.0	125.0	44	44	44	44	44	44	----	44	44	44	44	44	44	44
Baltimore	56.3	62.5	75.0	100.0	125.0	125.0	112.5	112.5	125.0	137.5	137.5	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44	40
Birmingham	62.5	62.5	75.0	80.0	100.0	------	------	105.0	112.5	112.5	112.5	125.0	125.0	44	44	44	44	44	----	----	44	44	44	44	44	44	44
Boston	62.5	68.8	80.0	80.0	100.0	100.0	100.0	105.0	110.0	110.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Buffalo	60.0	62.5	70.0	85.0	100.0	125.0	100.0	100.0	112.5	125.0	125.0	125.0	131.3	48	[21] 48	44	44	44	44	44	44	44	44	44	44	44	44
Chicago	68.0	69.0	70.0	87.5	125.0	125.0	105.0	105.0	125.0	125.0	137.5	150.0	150.0	44	[72] 44	[72] 44	44	44	44	44	44	44	44	44	44	44	44
Cincinnati	62.5	65.0	75.0	75.0	100.0	90.0	95.0	105.0	115.0	125.0	131.3	135.0	137.5	44½	44	44	44	44	44	44	44	44	44	44	44	44	44
Cleveland	65.0	80.0	90.0	100.0	125.0	125.0	110.0	137.5	150.0	150.0	150.0	150.0	150.0	[14] 44	44	44	44	44	44	44	44	44	44	44	44	44	44
Dallas	62.5	67.5	75.0	75.0	100.0	100.0	100.0	100.0	100.0	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Denver	56.3	70.0	75.0	87.5	100.0	103.1	103.1	115.6	115.6	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Detroit	60.0	65.0	80.0	90.0	125.0	125.0	100.0	112.5	125.0	125.0	137.5	137.5	137.5	[21] 48	44	44	44	44	44	44	44	44	44	44	44	44	44
Indianapolis	65.0	75.0	75.0	85.0	125.0	125.0	112.5	125.0	125.0	125.0	135.0	140.0	145.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Jacksonville	------	------	------	------	------	------	------	------	------	------	------	------	125.0	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	44
Kansas City, Mo	62.5	68.8	75.0	90.0	110.0	110.0	107.5	107.5	125.0	125.0	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44	44
Los Angeles	50.0	50.0	62.5	75.0	87.5	100.0	100.0	100.0	100.0	100.0	112.5	112.5	112.5	48	48	48	44	44	44	44	44	44	44	44	44	44	44

[1] 44 hours per week, June to August, inclusive.
[14] 48 hours per week, October to April, inclusive.
[21] 44 hours per week, June to September, inclusive.
[41] 44 hours per week, July to September, inclusive.
[72] 48 hours per week, December to March, inclusive.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Structural-iron workers—Continued

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Louisville	50.0	60.0	70.0	80.0	100.0	100.0	100.0	125.0	125.0	125.0	125.0	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Memphis	62.5	65.0	75.0	87.5	100.0	------	100.0	100.0	100.0	112.5	112.5	125.0	125.0	44	44	44	44	44	----	44	44	44	44	44	44	44
Milwaukee	56.3	62.5	70.0	80.0	100.0	100.0	90.0	100.0	112.5	112.5	112.5	120.0	120.0	[12] 44	[12] 44	[72] 44	44	44	44	44	44	44	44	44	44	44
Minneapolis	56.3	62.5	68.8	87.5	87.5	100.0	100.0	100.0	100.0	100.0	100.0	125.0	125.0	48	44	44	44	44	44	44	44	44	44	44	44	44
Newark, N. J.	62.5	72.5	75.0	87.5	112.5	112.5	112.5	125.0	150.0	150.0	150.0	175.0	175.0	44	44	44	44	44	44	44	44	44	44	44	44	44
New Haven	62.5	62.5	80.0	92.5	106.3	106.3	100.0	106.3	125.0	125.0	125.0	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
New Orleans	62.5	62.5	75.0	75.0	100.0	100.0	100.0	100.0	106.3	112.5	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
New York	62.5	68.8	80.0	87.5	112.5	112.5	112.5	112.5	150.0	150.0	150.0	175.0	175.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Omaha	58.8	68.8	75.0	90.0	115.0	112.5	100.0	112.5	112.5	112.5	112.5	112.5	112.5	48	[12] 44	44	44	44	44	44	44	44	44	44	44	44
Philadelphia	60.0	70.0	92.5	92.5	112.5	112.5	100.0	112.5	125.0	125.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Pittsburgh	62.5	70.0	87.5	100.0	100.0	125.0	100.0	125.0	137.5	143.8	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Portland, Oreg.	62.5	70.0	87.5	100.0	112.5	101.3	101.3	112.5	112.5	112.5	112.5	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Providence	56.3	68.8	80.0	92.5	100.0	100.0	92.5	100.0	112.5	112.5	125.0	125.0	125.0	44	44	44	44	44	44	44	44	44	44	44	44	44
Richmond, Va.	56.3	62.5	80.0	92.5	100.0	100.0	100.0	100.0	100.0	125.0	125.0	125.0	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Louis	65.0	70.0	80.0	92.5	125.0	125.0	106.3	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44
St. Paul	56.3	62.5	68.8	80.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	125.0	125.0	48	[21] 48	44	44	44	44	44	44	44	44	44	44	44
Salt Lake City	62.5	68.8	81.3	100.0	112.5	100.0	90.0	100.0	112.5	112.5	112.5	112.5	112.5	44	44	44	44	44	44	44	44	44	44	44	44	44
San Francisco	75.0	75.0	87.5	100.0	112.5	125.0	112.5	112.5	125.0	125.0	125.0	137.5	137.5	44	44	44	44	44	44	44	44	44	44	44	44	44
Scranton	56.3	62.5	68.8	87.5	100.0	112.5	100.0	100.0	112.5	112.5	137.5	137.5	137.5	48	[21] 48	[21] 48	44	44	44	44	44	44	44	44	44	44
Seattle	62.5	75.0	87.5	100.0	112.5	112.5	100.0	112.5	112.5	112.5	112.5	112.5	125.0	44	44	44	40	44	44	44	44	44	44	44	44	44
Washington	56.3	70.0	80.0	92.5	98.0	125.0	125.0	125.0	150.0	150.0	150.0	150.0	150.0	44	44	44	44	44	44	44	44	44	44	44	44	44

Typesetting-machine operators: Book and job

Atlanta	43.8	46.9	46.9	46.9	57.5	[15] 75.0	80.0	80.0	80.0	80.0	80.0	100.0	100.0	48	48	48	48	48	48	44	44	44	44	44	44	44
Baltimore	46.9	50.0	50.0	60.4	81.3	83.3	83.3	90.9	90.9	90.9	90.9	90.9	90.9	48	48	48	48	48	48	48	44	44	44	44	44	44
Birmingham	52.5	57.3	57.3	57.3	78.1	80.0	80.0	80.0	80.0	85.2	92.5	92.5	92.5	48	48	48	48	48	48	44	44	44	44	44	44	44
Boston	45.8	50.0	54.2	59.4	77.1	91.5	91.5	91.5	96.5	96.5	96.5	100.0	100.0	48	48	48	48	48	44	44	44	44	44	44	44	44
Buffalo	50.0	53.1	59.4	59.4	71.9	95.5	95.5	95.5	104.5	109.1	111.4	115.9	115.9	48	48	48	48	48	44	44	44	44	44	44	44	44
Charleston, S. C.	------	50.0	50.0	50.0	50.0	103.4	103.4	[b]95.5	88.6	95.5	88.6	88.6	88.6	-----	48	48	48	48	44	44	44	44	44	44	44	44
Chicago	50.0	50.0	60.2	77.9	98.8	109.2	109.2	113.2	119.1	119.1	119.1	125.9	125.9	48	48	48	48	48	44	44	44	44	44	44	44	44
Cincinnati	49.0	54.2	54.2	58.3	81.3	104.5	104.5	104.5	109.1	109.1	109.1	113.6	113.6	48	48	48	48	44	44	44	44	44	44	44	44	44
Cleveland	53.8	62.5	62.5	68.8	87.5	93.8	93.8	93.8	100.0	109.1	111.4	113.6	113.6	48	48	48	48	48	48	44	44	44	44	44	44	44
	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	104.5													

Cleveland	53.8	62.5	62.5	68.8	87.5	93.8	93.8	93.8	100.0	109.1	111.4	113.6	113.6	48	48	48	48	48	48	44	44	44	44	44	44	44
Dallas	[42]12.5	[42]12.0	[42]12.0	[42]12.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	104.5	48	48	48	48	48	44	44	44	44	44	44	44	44
Denver	54.2	54.2	59.4	65.6	81.3	81.3	95.5	95.5	95.5	102.3	102.3	102.3	102.3	48	48	48	48	48	48	44	44	44	44	44	44	44
Detroit	55.0	60.5	60.5	85.0	100.0	100.0	100.0	105.0	105.0	105.0	120.0	125.0	125.0	48	48	48	48	48	48	44	44	44	48	44	44	44
Fall River	------	45.8	46.9	46.9	62.5	72.7	72.7	72.7	81.8	81.8	81.8	81.8	81.8	-----	48	48	48	48	44	44	44	44	44	44	44	44
Indianapolis	50.0	56.3	56.3	60.4	81.3	100.0	92.7	95.5	95.5	98.0	100.0	102.3	104.5	48	48	48	48	48	44	44	44	44	44	44	44	44
Jacksonville	43.8	53.1	53.1	58.3	75.0	102.3	102.3	81.8	81.8	[b]88.6	98.9	98.9	98.9	48	48	48	48	48	44	44	44	44	44	44	44	44
Kansas City Mo	55.2	57.3	62.5	69.8	78.1	89.6	89.6	94.3	97.2	99.4	101.7	104.0	105.1	48	48	48	48	48	48	48	44	44	44	44	44	44
Little Rock	50.0	50.0	50.0	50.0	72.9	72.9	70.0	------	------	85.2	96.6	96.6	92.0	48	48	48	48	48	48	44	-----	-----	44	44	44	44
Los Angeles	58.3	60.4	62.5	70.8	81.3	104.5	104.5	104.5	110.2	110.2	116.6	116.6	120.5	48	48	48	48	48	44	44	44	44	44	44	44	44
Louisville	49.0	50.0	52.1	54.2	54.2	79.2	79.0	79.0	79.0	------	------	79.0	79.0	48	48	48	48	48	48	44	44	44	-----	-----	44	44
Manchester	35.4	37.5	39.6	41.7	66.7	77.3	79.5	79.5	79.5	79.5	79.5	79.5	79.5	48	48	48	48	48	44	44	44	44	44	44	44	44
Milwaukee	47.9	54.2	54.2	60.4	75.0	87.5	95.5	95.5	95.5	95.5	95.5	100.0	102.3	48	48	48	48	48	48	44	44	44	44	44	44	44
Minneapolis	50.0	52.1	52.1	61.5	87.5	87.5	95.5	95.5	95.5	99.5	95.5	99.5	99.5	48	48	48	48	48	48	44	44	44	44	44	44	44
Newark, N.J.	47.9	50.0	56.3	72.9	91.7	111.4	102.3	109.1	115.9	115.9	118.2	120.5	122.7	48	48	48	48	48	44	44	44	44	44	44	44	44
New Haven	45.8	45.8	45.8	45.8	58.3	58.3	86.4	86.4	86.4	86.4	86.4	86.4	86.4	48	48	48	48	48	48	44	44	44	44	44	44	44
New Orleans	------	53.3	53.3	53.3	76.7	76.7	78.4	78.4	78.4	78.4	78.4	78.4	78.4	-----	45	45	45	45	45	44	44	44	44	44	44	44
New York	54.2	54.2	58.3	75.0	93.8	113.6	113.6	113.6	120.5	120.5	122.7	125.0	127.3	48	48	48	48	48	44	44	44	44	44	44	44	44
Omaha	50.0	53.1	53.1	68.8	87.5	93.2	93.2	93.2	93.2	93.2	93.2	100.0	100.0	48	48	48	48	48	44	44	44	44	44	44	44	44
Philadelphia	43.8	47.9	54.2	64.6	93.8	93.8	94.1	94.1	94.1	94.1	94.1	94.1	94.1	48	48	48	48	48	48	44	44	44	44	44	44	44
Pittsburgh	47.9	52.1	56.3	68.8	87.5	106.8	106.8	106.8	106.8	106.8	106.8	111.4	111.4	48	48	48	48	48	44	44	44	44	44	44	44	44
Portland, Oreg.	65.6	65.6	68.8	100.0	100.0	110.0	110.0	104.5	104.5	111.4	111.4	114.7	114.8	48	48	48	48	48	44	44	44	44	44	44	44	44
Providence	47.9	47.9	52.1	54.2	72.9	79.2	86.4	86.4	97.7	97.7	97.7	97.7	97.7	48	48	48	48	48	44	44	44	44	44	44	44	44
St. Louis	50.0	54.2	59.6	63.8	87.5	101.0	101.0	101.0	106.0	106.0	106.0	111.0	111.0	48	48	48	48	48	44	44	44	44	44	44	44	44
St. Paul	50.0	52.1	52.1	61.5	83.3	87.5	95.5	90.9	95.5	95.5	95.5	95.5	95.5	48	48	48	48	48	48	44	44	44	44	44	44	44
San Francisco	64.4	65.0	68.8	68.8	81.3	104.5	104.5	104.5	104.5	115.9	115.9	115.9	115.9	45	48	48	48	48	44	44	44	44	44	44	44	44
Scranton	45.8	50.0	50.0	54.2	81.3	85.4	85.2	90.9	90.9	110.0	100.0	102.3	104.5	48	48	48	48	48	48	44	44	44	44	44	44	44
Seattle	------	------	------	------	------	------	------	------	------	------	93.8	123.2	123.2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	44	42	42
Washington	50.0	56.3	56.3	75.0	87.5	95.5	95.5	95.5	95.5	95.5	95.5	102.3	102.3	48	48	48	[24] 48	[24] 48	44	44	44	44	44	44	44	44

[b] Machinist operators.
[12] 48 hours per week, November to April, inclusive.
[18] Old scale; strike pending.
[21] 44 hours per week, June to September, inclusive.
[24] 44 hours per week for 3 months between June 1 and Sept. 30.
[42] Per 1,000 ems nonpariel.
[73] 48 hours per week, December to March, inclusive.

UNION SCALES OF WAGES AND HOURS OF LABOR IN SPECIFIED OCCUPATIONS, 1913 TO 1928, BY CITIES—Continued

Typesetting-machine operators, daywork: Newspaper

City	Rates per hour (cents)													Hours per week											
	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1913	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Atlanta	[42] 8.5	[42] 8.5	[42] 8.5	[42] 8.5	[42] 9.0	[42] 10.5	[42] 10.0	[42] 10.0	[42] 10.5	[c] 12.0	[c] 12.0	[c] 12.0	[42] 12.0	48	48	48	48	48	[29] 48	[29] 48	[29] 48	[29] 48	[29] 48	48	48	48
Baltimore	53.6	61.9	61.9	65.5	93.3	93.3	95.5	95.5	106.8	106.8	110.2	110.2	110.2	42	42	42	42	45	45	44	44	44	44	44	44	44
Birmingham	52.5	56.5	57.7	67.5	67.5	67.5	82.5	82.5	82.5	[42] 12.0	92.5	95.0	97.5	[25] 42	[25] 42	[25] 42	[25] 42	[25] 42	[25] 42	[25] 42	[25] 42	[25] 42	42	[25] 42	[25] 42	[25] 25
Boston	63.0	68.0	68.0	83.0	95.0	95.0	107.0	107.0	112.0	117.0	117.0	125.0	125.0	[26] 42	[26] 42	[26] 42	[26] 42	[26] 42	[26] 42	44	44	44	44	[25] 44	[25] 44	[25] 44
Buffalo	50.0	53.1	59.4	65.6	71.9	87.5	87.5	87.5	95.8	95.8	102.1	102.1	102.1	48	48	48	48	48	48	48	48	48	48	48	48	48
Charleston, S. C.	[42] 9.0	[42] 9.0	[42] 9.0	[42] 9.0	57.1	94.8	94.8	87.5	87.5	87.5	87.5	87.5	92.7	[25] 39	[25] 39	[25] 39	[25] 39	[25] 42	48	48	48	48	48	48	48	48
Chicago	[47] 50.0	[47] 50.0	[48] 53.0	[49] 64.0	[49] 72.0	{[50] 115.0 / [50] 96.0}	115.0 / [50] 96.0	115.0 / [50] 96.0	129.0 / [51] 113.0	129.0 / [51] 113.0	129.0 / [51] 113.0	[135.6]	{138.0 / [51] 113.0}	48	45	45	[25] 45	[25] 45	48	48	{[29] 48 / [29] 45}	{48 / [29] 45}	45	45	45	
Cincinnati	52.1	56.3	56.3	87.5	107.3	107.3	107.3	113.3	113.3	113.8	113.8	113.8	118.3	[28] 47½	48	48	48	45	45	45	45	45	45	45	45	45
Cleveland	53.8	62.5	62.5	68.8	87.5	93.8	96.9	103.1	107.3	107.3	116.7	116.7	119.0	48	48	48	48	48	48	48	48	48	48	45	45	45
Dallas	[42] 12.5	[42] 12.0	[42] 12.0	[42] 12.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 16.3	[42] 16.3	[42] 16.3	39	[52] 39	[52] 39	[52] 39	[52] 39	[52] 39	[25] 36	[25] 36	[25] 36	[25] 36	[25] 36	[25] 36	[25] 36
Denver	63.3	63.3	72.7	72.7	97.8	97.8	93.3	93.3	103.3	103.3	103.3	103.3	110.6	45	45	45	45	45	45	45	45	45	45	45	45	45
Detroit	55.0	60.5	60.5	74.5	87.0	97.0	97.0	104.5	113.0	113.0	120.0	125.0	125.0	48	[29] 48	[29] 48	[29] 48	[29] 48	[29] 48	[29] 48	[29] 48	[29] 48	[29] 48	[29] 48	48	45
Fall River	45.8	45.8	36.9	50.0	75.0	79.2	79.2	79.2	87.5	87.5	87.5	87.5	87.5	48	48	48	48	48	48	48	48	48	48	48	48	48
Indianapolis	50.0	56.3	56.3	60.4	81.3	93.8	89.6	100.0	100.0	100.0	104.2	106.3	106.3	48	48	48	48	48	48	48	48	48	48	48	48	48
Jacksonville	[42] 9.0	52.1	55.2	58.3	83.3	83.3	83.3	83.3	83.3	89.6	100.0	100.0	100.0	45	48	48	48	48	48	48	48	48	48	48	48	48
Kansas City, Mo.	59.4	59.4	59.4	68.8	90.6	90.6	90.6	90.6	90.6	95.8	102.1	104.2	104.2	48	48	48	48	48	48	48	48	48	48	48	48	48
Little Rock	[42] 9.5	65.0	65.0	78.6	90.5	90.5	102.4	102.4	102.4	107.1	103.6	103.6	107.1	42	42	42	42	42	42	42	42	42	42	42	42	42
Los Angeles	62.2	66.7	66.7	75.6	86.7	86.7	101.1	101.1	107.8	107.8	114.0	114.0	117.8	45	45	45	45	45	45	45	45	45	45	45	45	45
Louisville	49.0	54.2	54.5	62.5	87.5	82.9	87.5	87.5	93.8	93.8	93.8	93.8	93.8	48	48	48	48	48	48	48	48	48	48	48	48	48
Manchester	35.4	37.5	39.6	41.7	66.7	70.8	72.9	72.9	80.2	82.3	83.3	83.3	83.3	48	48	48	48	48	48	48	48	48	48	48	48	48
Memphis	[42] 9.5	[42] 9.5	[42] 9.5	[53] 9.5	[42] 12.0	[42] 12.5	[42] 12.5	[42] 12.5	[42] 12.5	[42] 12.5	[42] 12.5	[42] 12.5	[42] 12.5	[25] 45	[25] 45	[25] 45	[25] 45	[25] 45	[25] 45	[25] 45	[25] 45	[25] 45	45	45	45	45
Milwaukee	45.8	54.2	56.3	56.3	77.1	93.8	93.8	93.8	97.9	102.5	102.5	106.3	106.3	48	47	48	48	48	48	48	48	48	48	48	48	48
Minneapolis	[42] 10.0	[42] 10.0	[42] 10.0	[42] 10.0	[42] 11.0	[42] 12.5	[42] 12.5	[42] 12.5	[42] 12.5	[42] 12.0	[42] 12.0	[42] 12.0	97.9	48	48	48	48	48	[25] 36	[25] 36	[25] 36	[25] 36	48	48	48	48
Newark, N. J.	60.9	63.0	69.6	76.1	89.1	110.9	110.9	110.9	110.9	119.6	121.7	130.4	132.6	46	46	46	46	46	46	46	46	46	46	46	46	46
New Haven	46.9	50.0	50.0	50.0	72.9	79.2	79.2	79.2	85.4	85.4	87.5	89.6	89.6	48	48	48	48	48	48	48	48	48	48	48	48	48
New York	66.7	66.7	71.1	96.7	122.2	122.2	122.2	122.2	128.9	133.3	133.3	140.0	142.2	45	45	45	45	45	45	45	45	45	45	45	45	45
Omaha	50.0	53.1	53.1	68.8	87.5	87.5	87.5	87.5	90.6	90.6	90.6	96.9	97.9	48	48	48	48	48	48	48	48	48	48	48	48	48
Philadelphia	45.8	45.8	52.1	66.7	81.3	79.2	79.2	79.2	87.5	87.5	87.5	91.3	91.3	48	48	48	48	48	48	48	48	48	48	48	46	46
Pittsburgh	55.0	61.0	65.0	77.0	87.5	111.8	111.8	118.9	121.1	121.1	125.6	126.7	126.7	48	[25] 45	[25] 45	[25] 45	48	46½	46½	45	45	45	45	45	45
Portland, Oreg.	68.3	68.3	72.7	100.0	106.7	106.7	106.7	106.7	106.7	106.7	106.7	106.7	106.7	45	45	45	45	45	45	45	45	45	45	45	45	45
Providence	47.9	50.0	52.1	66.7	87.5	100.0	95.8	95.8	104.2	111.1	104.2	108.3	108.3	48	48	48	48	48	48	48	48	48	48	48	48	48

Providence	47.9	50.0	52.1	66.7	87.5	100.0	95.8	95.8	104.2	111.1	104.2	108.3	108.3	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
Richmond, Va.	41.7	45.8	56.3	56.3	56.3	87.5	87.5	87.5	87.5	87.5	94.8	94.8	94.8	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
St. Louis	[42]11.0	[42]11.5	[42]11.5	[42]11.5	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	[42] 17.0	[42] 17.5	[42] 18.2	110.9	114.1	[56] 39	[56] 42	[56] 42	[56] 42	46	46	46	46	46	46	46	46	46	46	46
St. Paul	54.5	54.5	63.0	63.0	94.0	88.8	89.8	89.8	93.8	101.3	101.3	101.3	101.3	48	48	[57] 48	[57] 48	[57] 48	[57] 48	[57] 48	[57] 48	[57] 48	[57] 48	[57] 48	48	48	48	48
Salt Lake City	[42]10.0	[42]10.0	[42]10.0	[42]11.0	[58] 11.0	[59] 11.0	[42] 13.5	[42] 13.5	[42] 13.5	[42] 15.0	[42] 15.0	[42] 15.0	[42] 15.0	48	[60] 48	[60] 48	[60] 48	[60] 46½	[60] 46½	[61] 46½	[61] 46½	[61] 46½	[29] 43½	[29] 43½	[29] 43½	[29] 43½		
San Francisco	64.4	69.0	68.9	75.6	93.8	107.8	107.8	107.8	107.8	115.6	115.6	115.6	120.0	45	42	45	45	45	45	45	45	45	45	45	45	45	45	45
Scranton	47.9	52.1	52.1	60.4	81.3	87.5	87.5	95.8	95.8	104.2	110.4	112.5	114.9	48	48	48	48	48	48	48	48	48	48	48	48	48	48	47
Seattle	75.0	78.6	80.1	100.0	114.3	114.3	114.3	114.3	121.4	121.4	121.4	123.2	123.2	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
Washington	60.7	60.7	69.8	92.9	104.0	104.0	104.0	104.0	110.0	110.0	128.6	128.6	128.6	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42

[25] Minimum; maximum, 8 hours per day.
[26] Actual hours worked, minimum, 6; maximum, 8 hours per day.
[28] Work 47½ hours, paid for 48.
[29] Maximum; minimum, 7 hours per day.
[42] Per 1,000 ems nonpareil.
[47] For 3,500 ems per hour; for 4,500 ems per hour, 55 cents and 1 cent bonus for each additional 100 ems per hour.
[48] For 3,500 ems per hour; for 4,500 ems per hour, 58 cents and 1 cent bonus for each additional 100 ems per hour.
[49] For 3,500 ems per hour; for 4,500 ems per hour, 70 cents and 1 cent bonus for each additional 100 ems per hour.
[50] For 4,000 ems per hour; for 4,500 ems per hour, $1.06 and 1 cent bonus for each additional 100 ems per hour.
[51] For 4,500 ems per hour; 1 cent bonus for each additional 100 ems per hour.
[53] Maximum; minimum, 5½ hours per day.
[55] Per 1,000 ems nonpareil and 45 cents per day bonus.
[56] Minimum; maximum, 7½ hours per day.
[57] Maximum; minimum, 7½ hours per day.
[58] Per 1,000 ems nonpareil and $1 per day bonus.
[59] Per 1,000 ems nonpareil and $1.25 per day bonus.
[60] Maximum; minimum, 6½ hours per day.
[61] Maximum; minimum, 40½ hours per week.
[o] Per 1,000 ems minion.

Wages and Hours of Labor in the Manufacture of Radio Receiving Sets, Speakers, and Tubes, 1927

A STUDY of the wages and hours of labor in the radio manufacturing industry of the United States was made by the Bureau of Labor Statistics of the United States Department of Labor during the latter part of 1927. Agents of the bureau visited establishments located in 8 States—Illinois, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, and Rhode Island—and secured 23 schedules representing the manufacture of radio receiving sets, 19 schedules representing the manufacture of loud speakers, and 18 schedules representing the manufacture of radio tubes. Some of the establishments visited made both sets and speakers. In these instances the employees were segregated. A few of the establishments covered in this report were engaged in the manufacture of articles other than radio apparatus. In all such cases only those employees engaged in the manufacture of radio appliances were included in this study. In order not to disclose the identity of any of the establishments which furnished information, figures are shown for the United States as a whole, rather than by States or districts, as is the usual custom of the bureau.

The radio industry, literally speaking, may not be in its infancy, yet certainly it has not yet passed out of its childhood, and changes and improvements follow one another in rapid succession. However, it was felt that so important and popular an industry merits the effort to secure and publish reliable wage data at this time.

The aim of all manufacturers of radio equipment is to bring to the hearer whatever goes into the microphone at the broadcasting station, unchanged and undistorted. To effect these results the various manufacturers have made many and important changes in design.

Engineers have designed and redesigned, tested and retested, built and rebuilt sets; consequently, the sets of a few months ago are more or less obsolescent to-day. In well-equipped radio laboratories experiments are carried on behind closed doors, and therefore, the public knows little of what is being done until the results of the experiments are ready for the test of public approval. Even during the time the study was being made radical changes took place in the industry as one manufacturer after another put on the market what is known as an A. C. (alternating current) tube set. This improvement made necessary a complete change in the manufacture both of sets and of tubes, and will in time seriously affect the output of the closely related battery industry. The trend of the times is for mechanism which requires little care or attention, which eliminates the necessity of renewals, and which will operate at the pressure of a button and the turn of a dial. What the improvements will be next year is highly problematical.

The radio manufacturing industry is quite seasonal, as there are several months in the year in which very little work is done. In the dull months practically all of the establishments retain only their technical force (busy in designing improvements) and a few key employees. Data for this study were secured for periods in which the various establishments were working full time and full force, or nearly so.

The establishments from which data were collected have varying lengths of pay-roll periods—1 week, 10 days, 2 weeks, and one-half month. In order to present data for all establishments and employees on the same basis, the days, hours, and earnings were compiled for a one-week period for the establishments that have a longer pay period, and thus the tables represent a sample normal week.

All data were obtained by agents of this bureau directly from the pay rolls and other records of the establishments.

Receiving Sets

IN THE manufacture of receiving sets data were obtained for 10,070 employees—5,845 males and 4,225 females.

Seventeen of the most important occupations were selected for separate presentation. These 17 occupations include 4,797 males and 3,815 females, a total of 8,612, or over 85 per cent of all the employees covered in the study. In the selected occupations over one-half of the total number of employees fell under four groups—subassemblers (2,934 persons), visual inspectors (933 persons), solderers (878 persons), and final assemblers (860 persons).

The average number of days on which employees worked in one week ranged from 4.9 for packers and wrappers, female, to 5.8 for cabinetmakers, male, and tool and die makers, male. The average for all males was 5.5; for all females, 5.3; and for all employees, both male and female, 5.4.

The average hours actually worked in one week ranged from 39.7 for packers and wrappers, female, to 51.6 for cabinetmakers, male, the average for all males being 47.5; for all females, 43.3, and for all employees, both male and female, 45.8.

The average full-time hours per week ranged from 47.3 for lacquerers, female, to 51.1 for drill-press operators, female. The average for all males was 48.5; for all females, 48.3; and for all employees, both male and female, 48.4. It will be noted that there is a much greater difference between the hours actually worked and the average full-time hours for females than there is for males.

Average earnings per hour ranged from $0.324 for testers, electrical, female, to $0.863 for tool and die makers, male. The average for all males was $0.590; for all females, $0.384; and for all employees, both male and female, $0.508.

The average actual earnings in one week ranged from $13.94 for packers and wrappers, female, to $44.06 for tool and die makers, male, the average for all males being $28.05, for all females, $16.62; and for all employees, male and female, $23.25.

The average full-time earnings per week ranged from $15.94 for testers, electrical, female, to $42.11 for tool and die makers, male; the average for all males being $28.62; for all females, $18.55; and for all employees, male and female, $24.59.

In the 23 establishments covered in this study 13 paid additional for overtime. Nine of these paid time and one-half after normal daily hours, in addition to which 1 paid double time for Sunday and 1 paid double time for Sunday and holidays. One establishment paid time and one-half after normal daily hours when men were called out by foremen. Another paid time and one-half after normal daily hours to their die makers only, while 1 paid time and one-half after 9 hours per day and 1 after 48 hours per week.

Three of the establishments had bonus systems in operation, two being based on production and the other on attendance. In the latter, employees losing no time during the week were paid $1 additional.

Description of Occupations

Since the changes in designs have necessarily made changes in occupations in the manufacture of radio receiving sets, only a brief and general description of occupations will be attempted.

Assemblers, final or mounting.—Bring together the units or parts that have been subassembled and mount them on the chassis, panel, or cabinet.

Assemblers, sub.—Assemble units or parts of a minor nature—that is, small parts which form units that are later mounted on the chassis or panel. They do the necessary filing and fitting of the parts.

Cabinetmakers.—Assemble the parts of the cabinet that have been cut and dressed in the machine department. They are frequently designated as "bench hands" or carpenters. The work is done by hand. Clamps or other devices are used to hold joints together. These joints are fastened with glue or braces at the points of union.

Coil winders, machine.—Two kinds of coils are made—single and layer. In making layer coils the operator inserts coil core on spindle and fastens wire terminal to the eyelet in the core. Machine winds wire around the core, and between each layer the operator inserts a sheet of wax-paper insulation. After the required number of layers are wound on the core the operator clips the wire, removes the coil from spindle of machine, and places a paper sticker on the terminal end for the lead soldering.

In making single coils the wire is fastened to the eyelet in the core and the machine winds a single strand of wire which is automatically spaced. While the coil is being wound the operator applies a coat of shellac with a brush.

Drill-press operators.—Operate a drill press to drill, countersink, and tap holes in panels or chassis.

Inspectors, visual.—Inspect raw materials, parts, and assembled mounted units.

Laborers, general.—Do trucking, move materials, load and unload cars.

Lacquerers.—Parts are either dipped, sprayed, or placed on conveyor belt and passed through a lacquer solution. Lacquering is done to prevent tarnishing. Coils are also given a lacquer bath to insulate and protect them.

Packers and wrappers.—Wrap articles in paper to prevent damage, pack in container, insert instructions, and stencil the container, in preparation for shipment.

Platers.—Tend apparatus in electroplating various parts with nickel, gold, or silver.

Polishers.—The article to be polished is held by the operator against a revolving spindle controlled by a foot pedal. The polishing wheel, or disc, is covered with prepared cloth. The operator, with emery cloth or file may also remove rough parts before polishing.

Punch-press operators.—Punch out various sheet-metal units, such as covers, panels, bases, flanges, angles, condenser plates, etc.

Repairers.—Repair models brought in by customers; also repair parts that have been injured during process of manufacture.

Screw-machine operators, hand and automatic.—Operate screw machines to form screws and other small metal parts.

Solderers.—Connect leads to bakelite tube eyelets, connect terminals after winding, scrape insulation off ends of wires, and solder connections.

Testers, electrical.—The part to be tested to see if it comes up to the standard is checked against a master set, which is connected to a battery, the dial on the meter registering the efficiency of the part tested. Coils are tested by attaching ends of coils to a testing machine (master set). From a meter reading the tester determines what coils of similar reading may be placed together in the same set.

Tool and die makers.—Are skilled men who make and repair cutting tools, jigs, dies, gauges, and fixtures.

Other employees.—Includes occupations not named above. These may be common occupations having very few employees, or occupations not commonly found.

TABLE 1.—WAGES AND HOURS OF LABOR IN THE MANUFACTURE OF RADIO RECEIVING SETS, 1927, BY OCCUPATION AND SEX

Occupation and sex	Number of—		Average number of days on which employees worked in one week	Average hours		Average earnings		
	Establishments	Employees		Actually worked in one week	Full-time per week	Per hour	Actual in one week	Full-time per week
Assemblers, final or mounting:								
Male	23	573	5.5	47.6	48.0	$0.550	$26.21	$26.40
Female	9	287	5.3	42.9	47.7	.351	15.05	16.74
Assemblers, sub:								
Male	22	820	5.3	45.1	47.8	.539	24.29	25.76
Female	20	2,114	5.2	42.6	48.0	.390	16.61	18.72
Cabinetmakers: Male	6	53	5.8	51.6	50.3	.726	37.49	36.52
Coil winders, machine:								
Male	10	101	5.2	46.8	51.0	.544	25.48	27.74
Female	17	387	5.4	44.7	47.8	.417	18.64	19.93
Drill-press operators:								
Male	15	131	5.4	46.6	49.2	.616	28.71	30.31
Female	5	55	5.7	48.1	51.1	.429	20.63	21.92
Inspectors, visual:								
Male	23	704	5.6	47.2	47.9	.550	25.94	26.35
Female	15	229	5.4	44.5	48.5	.350	15.57	16.98
Laborers, general: Male	22	383	5.5	48.7	48.4	.490	23.85	23.72
Lacquerers:								
Male	13	101	5.6	49.5	49.0	.689	34.12	33.76
Female	3	11	5.3	43.5	47.3	.433	18.82	20.48
Packers and wrappers:								
Male	22	315	5.5	48.5	48.4	.522	25.31	25.26
Female	5	16	4.9	39.7	47.5	.351	13.94	16.67
Platers: Male	9	73	5.5	46.8	48.0	.687	32.13	32.98
Polishers:								
Male	11	37	5.6	49.1	48.5	.698	34.29	33.85
Female	4	33	5.2	43.3	47.7	.509	22.06	24.28
Punch-press operators:								
Male	19	283	5.3	47.5	49.6	.606	28.76	30.06
Female	6	60	5.3	43.7	50.5	.439	19.19	22.17
Repairers: Male	22	179	5.5	48.6	48.0	.562	27.29	26.98
Screw-machine operators, hand and automatic: Male	10	59	5.4	46.2	48.0	.720	33.25	34.56
Solderers:								
Male	19	423	5.2	43.4	47.9	.596	25.89	28.55
Female	18	455	5.6	46.1	49.2	.367	16.88	18.06
Testers, electrical:								
Male	23	374	5.5	47.2	48.3	.566	26.71	27.34
Female	9	168	5.4	44.5	49.2	.324	14.42	15.94
Tool and die makers: Male	19	188	5.8	51.0	48.8	.863	44.06	42.11
Other employees:								
Male	23	1,048	5.6	49.7	49.2	.654	32.50	32.18
Female	15	410	5.0	41.2	48.4	.381	15.70	18.44
All employees:								
Male	23	5,845	5.5	47.5	48.5	.590	28.05	28.62
Female	20	4,225	5.3	43.3	48.3	.384	16.62	18.55
Male and female	23	10,070	5.4	45.8	48.4	.508	23.25	24.59

Speakers

THE speaker has become an integral part of radio reception and is the final phase of radio performance. If the speaker is faulty or fails to operate in harmony with the receiver, the best results are not obtained. Radio reception is in direct accord with the tone value of the speaker.

There are two types of speakers in general use, the horn and the cone, each claimed to possess some value in reproduction different from the other. Therefore, the selection of the type of speaker is a matter of individual choice.

In the manufacture of speakers data were secured from 18 establishments covering 2,428 employees—1,551 male and 877 female.

In this industry 12 occupations were selected as the most representative and most generally found in all establishments. Almost half of the employees covered in this study, 43 per cent to be exact, were classed as "assemblers."

The average earnings per hour ranged from $0.351 for visual inspectors, female, to $0.867 for tool and die makers, male, the average for all employees, male and female, being $0.502.

The average actual earnings in one week ranged from $12.93 for repairers, female, to $41.88 for tool and die makers, male, the average for all employees being $22.87.

The average full-time earnings per week ranged from $16.26 for packers and wrappers, female, to $41.79 for tool and die makers, male, the average for all employees being $24.

The average number of days on which employees worked in one week ranged from 4.6 for repairers, female, to 5.9 for testers, female, the average for all employees being 5.4.

The average hours actually worked in the one week canvassed ranged from 35 for repairers, female, to 49.1 for lacquerers, male, the average for all employees being 45.5.

The average full-time hours per week ranged from 44.5 for punch-press operators, female, to 49.2 for punch-press operators, male, the average for all employees being 47.8.

Of the 18 establishments covered, 5 paid additional for overtime. Two paid time and one-half after normal daily hours, 2 paid time and one-half after normal daily hours to time workers only, and 1 paid time and one-half after normal daily hours to tool and die makers only.

Only one establishment reported payment of a bonus. This establishment had a set standard of efficiency, and as this standard was exceeded an increasing bonus was given, varying from 0.5 to 20 per cent. In addition to the above, all employees on productive work who maintained an efficiency of 100 per cent for a whole calendar month and had not been absent or tardy more than one-half hour during the same month were given one day's vacation with pay. These days were cumulative if desired.

Description of Occupations

A brief description of the selected occupations in the making of speakers follows:

Assemblers.—Fit and assemble the various parts of the speaker.

Drill-press operators.—Operate a drill press to drill, countersink, and tap holes in the various parts.

Inspectors, visual.—Inspect the finish of the speaker, also see that cords (leads), connections, and other parts meet requirements.

Laborers, general.—Do trucking, move materials, load and unload cars, etc.

Lacquerers.—Dip or spray parts with a lacquer solution to give them a special finish and prevent tarnishing.

Packers and wrappers.—Wrap speakers in paper to prevent damage, and insert them in cartons.

Polishers.—The operator, with emery cloth or file, first removes the rough parts, and then the article to be polished is held against a revolving spindle controlled by a foot pedal. The polishing wheel or disk is covered with a prepared cloth.

Punch-press operators.—Form bell and base of the speaker and blank out and form diaphragm.

Repairers.—Repair speakers that have been sent in by customers, and also repair those that have been found defective during the process of making.

Solderers.—Solder leads, wires, and other parts to be connected.

Testers.—Testing is done by attaching the cords (leads) to an amplifier unit which is connected to a phonograph record. Testers make adjustments to the speakers by an adjustment screw, which regulates the tonal qualities.

Tool and die makers.—Are skilled men who make and repair cutting tools, jigs, dies, gauges, and fixtures.

Other employees.—This includes all kinds of work not listed above.

TABLE 2.—WAGES AND HOURS OF LABOR IN THE MANUFACTURE OF RADIO SPEAKERS, 1927, BY OCCUPATION AND SEX

Occupation and sex	Number of—		Average number of days on which employees worked in one week	Average hours		Average earnings		
	Establishments	Employees		Actually worked in one week	Full-time per week	Per hour	Actual in one week	Full-time per week
Assemblers:								
Male	18	472	5.3	45.1	48.2	$0.523	$23.60	$25.21
Female	17	583	5.3	42.3	46.8	.396	16.73	18.53
Drill-press operators:								
Male	13	61	5.3	44.5	48.0	.509	22.65	24.43
Female	4	7	5.4	44.0	47.8	.465	20.45	22.23
Inspectors, visual:								
Male	16	102	5.5	48.4	47.5	.535	25.87	25.41
Female	11	50	5.3	43.6	47.2	.351	15.28	16.57
Laborers, general: Male	12	67	5.3	46.9	47.6	.441	20.69	20.99
Lacquerers: Male	12	65	5.6	49.1	48.8	.600	29.48	29.28
Packers and wrappers:								
Male	17	128	5.3	46.4	48.3	.487	22.59	23.52
Female	3	18	5.7	45.0	45.8	.355	15.99	16.26
Polishers: Male	4	14	5.4	46.7	48.7	.433	20.20	21.09
Punch-press operators:								
Male	14	107	5.5	48.9	49.2	.626	30.64	30.80
Female	3	8	5.8	45.8	44.5	.482	22.06	21.45
Repairers:								
Male	15	57	5.6	46.8	46.7	.487	22.76	22.74
Female	3	11	4.6	35.0	47.1	.369	12.93	17.38
Solderers:								
Male	16	95	5.5	46.9	47.8	.532	24.95	25.43
Female	10	83	5.4	42.9	47.0	.383	16.45	18.00
Testers:								
Male	15	61	5.5	46.3	47.4	.573	26.53	27.16
Female	5	13	5.9	46.5	45.5	.374	17.42	17.02
Tool and die makers: Male	9	43	5.8	48.3	48.2	.867	41.88	41.79

TABLE 2.—WAGES AND HOURS OF LABOR IN THE MANUFACTURE OF RADIO SPEAKERS, 1927, BY OCCUPATION AND SEX—Continued

Occupation and sex	Number of—		Average number of days on which employees worked in one week	Average hours		Average earnings		
	Establishments	Employees		Actually worked in one week	Full-time per week	Per hour	Actual in one week	Full-time per week
Other employees:								
Male	18	279	5.6	49.8	49.6	$0.616	$30.68	$30.55
Female	9	104	5.4	44.4	47.4	.457	20.30	21.66
All employees:								
Male	18	1,551	5.5	47.1	48.4	.555	26.15	26.86
Female	17	877	5.3	42.7	46.8	.399	17.07	18.67
Male and female	18	2,428	5.4	45.5	47.8	.502	22.87	24.00

Tubes

A RADIO tube is an evacuated bulb having three elements—filament, plate, and grid. These vacuum tubes are of various types and designs, depending upon the work which they must do. They may, however, be divided into two general classes—low and high power receiving tubes. Increased amplification is obtained by the connection of several tubes, the plate of one being coupled to the grid of the next, and so on.

The occupations for which data are presented apply to the manufacture of receiving set tubes only. Establishments engaged in the manufacture of broadcasting tubes were not included in the study. A few establishments manufacture both kinds of tubes. Employees in the broadcasting department, however, were not included.

In the manufacture of radio tubes data were secured from 18 establishments covering 2,213 employees—374 male and 1,839 female. The predominance of females in this branch of the radio industry is in sharp contrast with the division of the sexes in both of the other branches—sets and speakers. In the manufacture of receiving sets 42 per cent and of speakers only 36 per cent of the employees were females, while in establishments making tubes 83 per cent were females.

There were 31 occupations which were considered important enough and so general in the various establishments as to warrant their separate presentation.

The occupation which had the largest representation was mounters, female, covering 552 employees. The next most numerous occupation was basers, female, with 155 employees.

The average earnings per hour ranged from $0.337 for filament testers, female, to $0.569 for firers, male, the average for all employees, male and female, being $0.444.

The average actual earnings in one week ranged from $14.37 for filament testers, female, to $28.10 for electric testers, male, the average for all employees being $20.36.

The average full-time earnings per week ranged from $15.97 for filament testers, female, to $27.82 for flare makers, male, the average for all employees being $21.58.

The average number of days on which employees worked in the one week studied ranged from 5.1 for base branders, female; filament testers, female; and grid inspectors, female; to 6.0 for electric testers, male; and firers, female; the average for all employees being 5.5.

The average hours actually worked in one week ranged from 41.7 for base branders, female, to 53. 5 for electric testers, male, the average for all employees being 45.9.

The average full time per week ranged from 46.2 hours for agers, female, to 50.3 for agers, male, the average for all employees being 48.6.

Of the 18 establishments covered in the study of the manufacture of radio tubes, 5 paid additional for overtime work. Three of the establishments paid time and one-half after normal daily hours. One paid time and one-half after normal daily hours to the mechanical force only, while one paid time and one-half after 5:30 p. m. Monday to Friday and 12:30 p. m. Saturday to machinists, and time and one-half after 6 p. m. Monday to Friday and 4 p. m. Saturday to all other maintenance men.

Three of the establishments reported bonus systems. One of these systems was based on a set standard of efficiency, and as this standard was exceeded an increasing bonus was given, varying from 0.5 to 20 per cent. In addition to the above, all employees on productive work who maintained an efficiency of 100 per cent for a whole calendar month and had not been absent or tardy more than one-half hour during the same month were given 1 day's vacation with pay. These days were cumulative, if desired.

Another establishment paid a bonus to workers in the mounting department only, each member of the mounting unit having the lowest shrinkage receiving $1 per week. The third establishment which reported a bonus paid 10 per cent of earnings each day that the time clock was punched before 7.55 a. m.

Description of Occupations

A brief description of the occupations as shown in the above table follows herewith:

Agers.—Test the resistance of tubes by inserting them in sockets on a rack and applying current of different voltage for periods of 3 to 8 minutes.

Basers.—(*a*) Straighten wires and thread them by hand through pins in the base; (*b*) place bulb and bakelite base in baking machine, fusing a cement to fasten bulb and base together; (*c*) cut off excess bottom wires after baking process; (*d*) take tube out of baking machine and insert tube pins into a solder solution to form contact points on the wires.

Base branders.—Feed the blank base into an automatic machine which pushes the base over a hot die and brands the tube designation and factory code, in one operation, on the outside.

Base fillers.—Feed bakelite base into an automatic machine which puts a ribbon of cement around the inside of the base. The purpose is to later cement the bulb to the base on the "sealing-in machine."

Bead makers.—After glass tubing has been cut to length, the operators feed three wires into a die and fit the bead tube over the

wires; this passes through a battery of heating torches which partially melts the tubes and a pinch clamp pinches the wire and glass together; the machine then automatically ejects the beads. The bead or anchor holds the mount firm.

Bead shapers.—As beads come from the "bead makers" the wires are formed, shaped, and cut to proper length by hand.

Bulb branders.—Feed blank bulbs into a machine which etches monogram inside bulb.

Check inspectors.—Make visual inspection of parts for quality.

Electric testers.—Test certain parts by use of electric measuring instruments.

Filament cutters.—Tend automatic machine which cuts filament wire to proper length. Operator places a spool of wire on machine and watches operation of machine.

Filament makers.—Tend automatic machine which imbeds filament wire into small nickel tubing on each end to form contacts.

Filament shapers.—By hand, hook the wire around a series to pins to form desired shape.

Filament testers.—Connect filament with battery. The proper connection is determined by lighting an electric bulb.

Filament welders.—Weld nickel tubing on each end of filament wire. This is spot welding and a hand operation.

Firers.—Tend hydrogen furnace for purpose of getting rid of moisture and impurities in materials. Firemen take care of temperature of furnaces and feed material into furnace.

Flare inspectors.—Inspect flares for cracks, size, shape, etc.

Flare makers.—Glass tubings are received in 4-foot lengths and placed in a circular holder which revolves and passes the tubes through a battery of torches which heat the glass gradually at the point where it is to be cut. The sections are cut and the bottom of each section reamed to form a flare, or cup-shaped piece of glass. Operation and ejection are automatic.

Glass cutters.—Hold several pieces of glass tubing against a carborundum wheel which cuts them to required length.

Grid inspectors.—Take off a certain number of turns from each cut grid to see that they are of proper shape.

Grid makers.—Wind fine wire around nickel support which has been nicked at points where the wire is wound, and feed, start, unload machine, and cut grid to proper length with foot-power cutter.

Grid stretchers.—By hand, feed grid over two fingers or projections of a machine, and stretch to required thickness by foot pressure.

Jigger testers.—Insert tubes in socket to see if they light.

Laborers, general.—Truck, carry material, etc.

Mounters.—Spot weld the various parts, filament, grid, plate, and bead.

Packers and wrappers.—Wrap tubes in paper and insert in cartons.

Plate gaugers or stretchers.—Feed nickel plates into a revolving machine. As they pass a certain point they are hit by a hammer partly to close opening of the plate to fit gauge. The plates then pass through the gauge.

Sealers and exhausters.—Tend automatic machine, insert the "mount" into holder, put blank bulb over mount. As machine revolves the bulb passes through a battery of fires fusing the bulb

and flare, a sealing operation. Place bulb in a lower rack of same machine where rubber tube connects to a series of pumps which exhaust the air from the stem tubing. Pass the tube through a "bombarding coil" which evaporates the magnesium on the plate by heating the plate, thus cleaning the inside of the bulb of gas and impurities. During the process the stem is melted off or sealed off.

Stem inspectors.—Inspect for cracks and defective wiring.

Stem makers.—"Flare" and "exhaust tubing" are automatically fed into a revolving machine. Stem makers feed lead wires into flare. They pass through a series of torches which melt and pinch together the exhaust tubing, flare, and lead wires, thus forming a stem. The machine then runs them through an annealer to keep them from cracking.

Stem shapers.—Wires in the stem are formed (or bent) by automatic machine. One stem operator feeds stems into machine and another takes stems out and places them on wooden trays.

Welders, getter on plate.—Getter is a piece of magnesium ribbon cut to certain length and spot welded to the plate. The plate is used to inclose the filament and the grid.

Other employees.—Employees in miscellaneous occupations not named above.

TABLE 3.—WAGES AND HOURS OF LABOR IN THE MANUFACTURE OF RADIO TUBES, 1927, BY OCCUPATION AND SEX

Occupation and sex	Number of—		Average number of days on which employees worked in one week	Average hours		Average earnings		
	Establishments	Employees		Actually worked in one week	Full-time per week	Per hour	Actual in one week	Full-time per week
Agers:								
Male	5	6	5.8	51.6	50.3	$0.377	$19.44	$18.96
Female	9	25	5.6	47.7	46.2	.402	19.18	18.57
Basers: Female	17	155	5.6	46.5	48.4	.423	19.65	20.47
Base branders: Female	7	10	5.1	41.7	47.4	.404	16.83	19.15
Base fillers: Female	9	22	5.6	44.9	49.0	.393	17.66	19.26
Bead makers: Female	12	55	5.5	46.0	50.0	.340	15.61	17.00
Bead shapers: Female	7	18	5.6	48.1	49.4	.347	16.71	17.14
Bulb branders: Female	4	9	5.3	45.8	48.2	.425	19.48	20.49
Check inspectors: Female	11	44	5.6	46.6	49.0	.415	19.37	20.34
Electric testers:								
Male	5	8	6.0	53.5	49.8	.525	28.10	26.15
Female	11	75	5.4	43.9	47.7	.397	17.45	18.94
Filament cutters: Female	10	14	5.2	43.4	48.8	.407	17.65	19.86
Filament makers: Female	13	38	5.3	44.2	49.1	.407	18.00	19.98
Filament shapers: Female	5	14	5.4	46.6	50.1	.369	17.17	18.49
Filament testers: Female	6	10	5.1	42.6	47.4	.337	14.37	15.97
Filament welders: Female	9	41	5.4	44.7	48.2	.415	18.52	20.00
Firers:								
Male	7	9	5.4	47.4	48.5	.569	26.99	27.60
Female	3	3	6.0	48.8	48.8	.357	17.40	17.40
Flare inspectors: Female	11	20	5.7	47.8	48.4	.384	18.35	18.59
Flare makers:								
Male	5	10	5.7	49.6	49.6	.561	27.82	27.82
Female	12	23	5.6	46.6	48.6	.358	16.69	17.40
Glass cutters: Female	11	20	5.4	43.8	48.9	.420	18.39	20.54
Grid inspectors:								
Male	3	6	5.3	45.2	47.3	.464	20.96	21.95
Female	8	16	5.1	43.4	50.1	.359	15.57	17.99
Grid makers: Female	17	86	5.4	45.3	49.1	.395	17.89	19.39
Grid stretchers: Female	8	22	5.6	46.8	49.4	.377	17.67	18.62
Jigger testers: Female	6	16	5.2	44.1	48.5	.410	18.06	19.89
Laborers, general: Male	9	28	5.8	51.5	49.1	.445	22.95	21.85
Mounters: Female	18	552	5.3	43.4	48.2	.426	18.52	20.53

TABLE 3.—WAGES AND HOURS OF LABOR IN THE MANUFACTURE OF RADIO TUBES, 1927, BY OCCUPATION AND SEX—Continued

Occupation and sex	Number of—		Average number of days on which employees worked in one week	Average hours		Average earnings		
	Establishments	Employees		Actually worked in one week	Full-time per week	Per hour	Actual in one week	Full-time per week
Packers and wrappers:								
Male	12	33	5.8	49.4	48.6	$0.477	$23.55	$23.18
Female	13	104	5.7	46.7	48.4	.400	18.66	19.36
Plate gaugers or stretchers: Female	8	15	5.5	47.0	49.8	.344	16.17	17.13
Sealers and exhausters:								
Male	12	69	5.7	49.6	49.2	.556	27.55	27.36
Female	16	123	5.3	44.6	48.4	.413	18.44	19.99
Stem inspectors: Female	12	32	5.6	45.8	48.9	.377	17.24	18.44
Stem makers: Female	18	117	5.3	43.9	48.8	.412	18.06	20.11
Stem shapers: Female	13	42	5.7	46.4	48.4	.369	17.16	17.86
Welders, getters on plate, female	11	21	5.7	47.1	49.0	.409	19.24	20.04
Other employees:								
Male	16	205	5.8	51.7	48.9	.673	34.85	32.91
Female	9	97	5.3	45.2	48.7	.421	19.02	20.50
All employees:								
Male	18	374	5.8	50.9	48.9	.602	30.62	29.44
Female	18	1,839	5.4	44.8	48.5	.407	18.27	19.74
Male and female	18	2,213	5.5	45.9	48.6	.444	20.36	21.58

Hours and Wages in Wisconsin Pea Canneries in 1927

THE Industrial Commission of Wisconsin gives in the June, 1928, issue of the Wisconsin Labor Market some data concerning usual wages and hours in pea canneries in Wisconsin in 1927, based on reports from 129 canning establishments, employing a total of 5,618 women, girls, and boys. The usual wage is defined as the remuneration most frequently paid for one hour of labor. It was first determined for each cannery separately, and then an average usual wage for all canneries was calculated, in which equal weight was given to each cannery, regardless of its size. The same process was followed in regard to hours.

The usual wage varied from as low as 22 cents per hour to as high as 35.5 cents. The average usual rate for the 129 canneries was 24.9 cents an hour. Reports from 31 of the canneries showed a second usual wage, which was ordinarily a rate for overtime, or for some class of work different from that for which the first usual wage was paid. The second usual wage rate varied from 22.5 cents to 40 cents per hour, the average for the 31 canneries being 30.9 cents an hour.

The usual working-day ranged from 3.5 hours in some canneries to 9 in others, the average usual day being 6.7 hours. The maximum number of hours during which the canneries operated on any one day varied from 7 to 12.5 hours, and the maximum per week from 22 to 60.

Under the Wisconsin law the normal working day for women in canneries is limited to 9 hours, but in certain emergencies those over 17 years may be employed for 11 hours a day, though not for more than 60 hours a week. Special note was made of the extent to which these emergency provisions were utilized.

Seventy-five of the 129 canneries reporting operations during 1927, completed the season without any emergency days, 14 canneries operated one emergency day and 17 canneries operated two emergency days. Only 23 of the 129 canneries reported three or more emergency days during the season.

Wage Reduction on English Railways [1]

ON July 28 the English papers announced that the heads of the railway companies and the leaders of the railway unions, who had been carrying on negotiations as to a change in wage rates, had reached an agreement under which wages would be reduced by 2½ per cent, beginning August 13. Further, it was announced that the cut would be extended to the salaries of the clerical and managerial staffs, and that, at the request of the directors of the companies, their fees would be reduced by the same percentage.

The negotiations leading up to this settlement, which had been carried on without public reports, began with a proposal from the companies to change in three respects the agreement under which the men have been working since 1919. Their revenues, they said, had suffered severely through the competition of motor transport, and a reduction of expenses was absolutely necessary. Therefore they asked for, first, the immediate withdrawal of the whole of the war bonus; second, the cancellation of extra rates for night work, Sunday duty, and overtime; and third, the temporary suspension of the guaranteed day and week, and the substitution of a guaranteed week, which should include all overtime, Sunday duty, and night work.

These proposals, if agreed to, would sweep away several features of the 1919 settlement which the men held to be of fundamental importance. At that time a basic wage was established for each grade of workers, with a cost-of-living bonus in addition. As the cost-of-living index has fallen, this variable addition or bonus has fallen, but at a different rate for the different grades, until it has practically disappeared from the earnings of the higher paid workers, while remaining an important element in the wages of the lower grades. Abolishing it would at one and the same time reduce the wages of those who were making least and upset the whole relation of the earnings of the different grades.

Even more important were the proposals concerning extra rates and the guaranteed day and week. Under the 1919 agreement the workers were to receive a full week's pay for a six-day week, Sunday being paid for separately at special rates. Moreover, each day was to be counted by itself, overtime rates being paid for any overtime, even if on some other day of the week the worker should be employed only part time or not at all. Under the proposed arrangement the guaranteed day would be given up altogether; 48 hours would still constitute a week, but it would include all the work done within seven days, whether this were done in the regular hours or were overtime, Sunday duty, or night work.

[1] Data are from Manchester Guardian, July 28, 1928, p. 13; the Daily Herald (London), July 27, 1928, p. 1, and July 28, 1928, p. 6.

On these terms the railroad heads and the union leaders went into conference. Discussions were held in private, but as the men were known to be strongly opposed to the terms, long negotiations were expected. Agreement was reached, however, in less than a week. The wage cut is substituted for the withdrawal of the bonus and the changes in extra rates and in the guaranteed day and week. The standard agreements, based on the 1919 settlement, are to be considered as temporarily suspended, not given up. The present agreement is to remain in force for a year, after which either party may terminate it at three months' notice. The railway shopmen, not included under the standard agreements, are to be brought under this. They are to suffer the 2½ per cent wage cut, but as an offset the companies pledge themselves to restore full-time work in the shops wherever possible, and where this could be done only by dismissing part of the force, to give a five-day week. Both sides pledge themselves to try to induce all workers not members of the railway unions to accept the terms of this agreement, and they also agree that the settlement is made without prejudice to the right of either side, upon its termination, to resort to the established machinery for securing changes in wages and working conditions, notwithstanding their failure to use that machinery on this occasion.

The settlement is unique in several respects. It is said to be the first time that in any strongly organized industry a cut in wages has been accepted without either prolonged negotiations or a stoppage. It is also said to be the first time that the principle has been accepted that if reductions in earnings are necessary, the cut should apply throughout the whole industry, not merely to the wage earners. And it is probably the first time that a worsening of conditions has been carried through with an increase in friendly feeling on both sides.

Part of the credit for the prompt agreement is ascribed to the effort made by some of the railroad heads nearly a year ago to secure the cooperation of the men in improving conditions upon the roads. A series of cooperative conferences was planned (see Labor Review, December, 1927, p. 60), at which matters relating to the operation of the roads were to be discussed, the officials giving facts and figures as required, and the men being called upon for criticisms and suggestions. Consequently, the men had an actual knowledge of conditions, appreciated the need for a reduction in expenses, and brought their whole intelligence to bear upon the question of how this could be accomplished with as little permanent injury to their position as possible.

Earnings and Hours of Labor in Iron and Steel Industry of Germany, 1926 and 1928

EARNINGS and hours of labor for selected occupations of the iron and steel industry of Western Germany, for the spring of 1926, were shown in the Labor Review for November, 1926 (p. 116). Through the courtesy of the United States Department of State and its consular representatives, the bureau is able to publish comparative data for the spring of 1928, as follows:

EARNINGS AND HOURS OF LABOR IN SELECTED OCCUPATIONS OF THE IRON AND STEEL INDUSTRY OF WESTERN GERMANY IN THE SPRING OF 1926 AND OF 1928

[Mark = 23.8 cents]

Department and occupation	Spring of 1926				Spring of 1928				
	Hours per day	Earnings per day			Hours per week	Earnings per day			
		Lowest		Highest		Lowest		Highest	
		Mks.	*Dolls.*	*Mks.* *Dolls.*		*Mks.*	*Dolls.*	*Mks.*	*Dolls.*
Blast furnaces:									
Blowers	8	7.40	1.76	9.80 2.33	56	10.35	2.46	10.75	2.56
Keepers	8	6.65	1.58	8.70 2.07	56	9.87	2.35	10.10	2.40
Skip operators	8	6.80	1.62	8.72 2.08	62	7.50	1.79	8.24	1.96
Stockers	10	5.50	1.31	6.64 1.58	62	6.79	1.62	8.02	1.91
Thomas furnaces:									
Blowers	10	9.30	2.21	12.20 2.90					
Regulators	10	8.10	1.93	12.50 2.98	53	14.90	3.55	18.15	4.32
Regulators, second	10	7.60	1.81	11.60 2.76					
Mold placers	10	8.25	1.96	10.55 2.51	53	10.51	2.50	16.10	3.83
Laborers	10	5.50	1.31	6.80 1.62	53	7.20	1.71	10.80	2.57
Martin furnaces:									
Melters	10	9.12	2.17	11.50 2.74	53	11.15	2.65	15.60	3.71
Melters, second	10	7.70	1.83	10.30 2.45	53	8.65	2.06	13.55	3.22
Ladlemen and mold placers	10	6.18	1.47	9.33 2.22	53	8.70	2.07	15.60	3.71
Blooming mills:									
Rollers in charge	10	10.60	2.52	16.75 3.99					
Rollers, first	10	9.30	2.21	12.80 3.05	53	13.30	3.17	18.54	4.41
Rollers, second (catchers)	10	8.00	1.90	12.50 2.98	53	11.40	2.71	15.50	3.69
Trimming and cutting floor:									
Shearmen	10	7.30	1.74	9.50 2.26	57	9.20	2.19	16.30	3.88
Hot straighteners	10	6.90	1.64	9.50 2.26					
Laborers	10	5.50	1.31	9.55 2.27	57	8.10	1.93	13.90	3.31
Wire mills:									
Rollers in charge	10	11.00	2.62	23.20 5.52	54	16.20	3.86	28.50	6.78
Furnace operators	10	9.50	2.26	18.20 4.33	54	14.90	3.55	25.10	5.97
Heaters	10	7.20	1.71	13.90 3.31					
Wire rollers	10	8.20	1.94	16.00 3.81					
Thin-plate mills:									
Rollers	10	10.20	2.43	15.60 3.71	48	15.90	3.78	21.70	5.16
Shearmen	10	8.90	2.12	13.40 3.19					
Rolling round bars:									
Rollers	10	9.20	2.19	23.20 5.52	54	13.20	3.14	25.30	6.02
Heaters	10	7.60	1.81	19.20 4.57					
Laborers	10	5.90	1.40	8.70 2.07					
Iron foundries:									
Molders	9	8.20	1.94	11.50 2.74	52–57	9.95	2.37	11.50	2.74
Core makers	9	7.50	1.79	11.00 2.62	52–57	9.00	2.14	11.10	2.64
Cupola melters	9	6.10	1.45	9.00 2.14	52–57	7.30	1.74	9.10	2.17
Laborers	9	5.50	1.31	7.50 1.79	52–57	6.60	1.57	8.20	1.95
Forges:									
Hammersmiths	9–10	8.50	2.02	13.50 3.21	54	[1].84	[1].20	[1]1.45	[1].35
Hammer operators	9–10	7.05	1.66	11.00 2.62	54	[1].78	[1].19	[1]1.11	[1].26
Laborers	9–10	5.50	1.31	6.40 1.52	54	[1].60	[1].14	[1]1.03	[1].25
Mechanical department:									
Skilled workers	9	7.50	1.79	10.50 2.50	52	[1].86	[1].20	[1]1.21	[1].29
Semiskilled workers	9	6.30	1.50	8.50 2.02	52	[1].76	[1].18	[1]1.02	[1].24
Unskilled workers	9	5.50	1.31	6.50 1.55	52	[1].60	[1].14	[1].72	[1].17

[1] Earnings per hour.

Wage Rates in Aguascalientes, Mexico

THE maximum and minimum wage rates given below are those paid in the principal industries in Aguascalientes, Mexico, and are included in a report from vice consul Eli Taylor, at that city, dated June 20, 1928. One of the principal industries is that of drawn work, which is a household industry, done mainly by Indian women whose average earnings are from 49 to 73 cents a day, according to the nature and quantity of the work done.

WAGES IN SPECIFIED INDUSTRIES IN AGUASCALIENTES, MEXICO

[Conversions into U. S. currency made on basis of peso=48.54 cents]

Industry	Maximum daily wages	Minimum daily wages	Industry	Maximum daily wages	Minimum daily wages
Bakeries (making pastry only)	$0.97	$0.24	Ice plants	$1.46	$0.49
Confectionery	1.46	.73	Matches (wax)	.73	.24
Cigarettes	.73	.24	Pottery	.73	.24
Corn-grinding mills	.73	.49	Printers	1.46	.36
Electric light and power company	3.88	.73	Shoemakers	1.46	.61
Harness making	1.21	.36	Soap	1.21	.49
Hats, straw	.73	.49	Starch and flour mill	1.94	.49
			Tanneries	.73	.24

TREND OF EMPLOYMENT

Employment in Selected Manufacturing Industries in July, 1928

EMPLOYMENT in July, 1928, was 1.1 per cent lower than in June and pay-roll totals decreased 3.1 per cent, according to returns made to the Bureau of Labor Statistics.

The usual closing for inventory taking and the season for repairs and vacations customarily result in a decrease in employment in July and also in a pronounced drop in pay-roll totals. The falling off in employment was, however, considerably *less in July, 1928*, than it was in July of 1923, 1924, 1926, and 1927; it was the same as in July, 1925.

The Bureau of Labor Statistics' weighted index of employment for July, 1928, is 84.7, as compared with 85.6 for June, 1928, 85.5 for May, 1928, and 87.3 for July, 1927; the weighted index of pay-roll totals for July, 1928, is 87.4, as compared with 90.2 for June, 1928, 90.1 for May, 1928, and 89.1 for July, 1927.

Employment in July, 1928, stood 3 per cent below the level of employment in July, 1927, and pay-roll totals were 1.9 per cent smaller. The decreases in both these items, comparing 1928 with 1927, were decidedly smaller in July, 1928, than in any previous month of 1928.

The data for July, 1928, are based on returns made by 11,130 establishments in 54 of the principal manufacturing industries of the United States. These establishments in July had 3,062,147 employees whose combined earnings in one week were $81,146,928.

Comparison of Employment and Pay-roll Totals in June and July, 1928

INCREASED employment was shown in July, 1928, as compared with June in 18 of the 54 separate industries and increased pay-roll totals were shown in 12 industries. The notable increases in employment were 11.7 per cent in cane sugar refining, 9 per cent in ice cream, 6.6 per cent in rubber boots and shoes, 5.6 per cent in leather boots and shoes, and 4.5 per cent in automobile tires. The petroleum-refining industry showed a continuation of the mild upward trend begun in June, following a prolonged period of decline during which one-fifth of the industry's employees were dropped.

The pronounced decreases in employment were in knit goods, silk goods, woolen and worsted goods, women's wearing apparel, stoves, pottery, glass, the two tobacco industries, and pianos. The iron and steel industry reported a loss of 1 per cent in employment and the automobile industry a drop of 0.1 per cent in employment. The strike in cotton-goods mills in one vicinity, which occurred in

May, was still unsettled in July, and the industry therefore had not yet regained any of the employees concerned.

Two of the 12 groups of industries, each considered as a whole, showed more employees in July than in June. These were the leather group with a seasonal gain of 4.3 per cent and the food group with a gain of 0.5 per cent; employment in the paper group was unchanged. Both industries in the tobacco group and the 10 industries of the textile group reported fewer employees in July than in June, the total results being a drop of 5.4 per cent in the tobacco group and a drop of 3.3 per cent in the textile group. In the stone-clay-glass group, pottery and glass showed customary substantial July drops in employment while brick and cement increased but little, leaving the group with a net loss of 3 per cent. The decreases in the 6 remaining groups were comparatively small.

The West South Central and Mountain geographic divisions showed a gain in employment in July as compared with June, while each of the remaining 7 divisions reported fewer employees in July, the decreases ranging from less than one-tenth of 1 per cent in the New England States to 3.6 per cent in the East South Central States.

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL ESTABLISHMENTS DURING **ONE WEEK** EACH IN JUNE AND JULY, 1928

Industry	Establishments	Number on pay roll		Per cent of change	Amount of pay roll		Per cent of change
		June, 1928	July, 1928		June, 1928	July, 1928	
Food and kindred products	**1,717**	**219,856**	**221,216**	(1)	**$5,737,976**	**$5,773,400**	(1)
Slaughtering and meat packing	191	86,155	86,473	+0.4	2,263,753	2,262,615	−0.1
Confectionery	296	29,207	28,096	−3.8	555,197	510,710	−8.0
Ice cream	241	11,276	12,295	+9.0	375,964	423,017	+12.5
Flour	323	14,267	14,718	+3.2	378,983	396,547	+4.6
Baking	650	68,984	68,503	−0.7	1,864,583	1,845,148	−1.0
Sugar refining, cane	16	9,967	11,131	+11.7	299,496	335,363	+12.0
Textiles and their products	**1,862**	**563,307**	**546,199**	(1)	**10,780,466**	**10,284,475**	(1)
Cotton goods	462	206,117	201,969	−2.0	3,076,856	3,042,495	−1.1
Hosiery and knit goods	239	78,745	74,453	−5.5	1,477,426	1,307,801	−11.5
Silk goods	187	53,751	51,880	−3.5	1,152,334	1,066,933	−7.4
Woolen and worsted goods	187	62,348	59,932	−3.9	1,387,596	1,300,815	−6.3
Carpets and rugs	29	22,717	22,309	−1.8	541,245	532,862	−1.5
Dyeing and finishing textiles	93	28,703	28,200	−1.8	684,117	655,382	−4.2
Clothing, men's	289	59,552	58,386	−2.0	1,418,499	1,399,389	−1.3
Shirts and collars	99	19,158	18,859	−1.6	304,126	281,463	−7.5
Clothing, women's	205	21,566	20,554	−4.7	493,438	484,341	−1.8
Millinery and lace goods	72	10,650	9,657	−9.3	244,829	212,994	−13.0
Iron and steel and their products	**1,819**	**657,716**	**650,334**	(1)	**19,928,490**	**18,991,705**	(1)
Iron and steel	197	264,399	261,843	−1.0	8,238,688	7,764,125	−5.8
Cast-iron pipe	41	12,965	12,385	−4.5	287,410	284,286	−1.1
Structural ironwork	162	25,899	25,841	−0.2	787,427	768,332	−2.4
Foundry and machine-shop products	975	239,545	239,007	−0.2	7,288,821	7,052,358	−3.2
Hardware	70	30,457	29,269	−3.9	762,656	714,612	−6.3
Machine tools	151	30,771	31,246	+1.5	1,008,665	982,870	−2.6
Steam fittings and steam and hot-water heating apparatus	106	34,114	32,756	−4.0	1,014,225	953,553	−6.0
Stoves	117	19,566	17,987	−8.1	540,598	471,569	−12.8
Lumber and its products	**1,140**	**212,138**	**210,041**	(1)	**4,712,497**	**4,556,249**	(1)
Lumber, sawmills	463	122,842	120,585	−1.8	2,534,607	2,463,089	−2.8
Lumber, millwork	264	31,465	31,531	+0.2	772,450	746,358	−3.4
Furniture	413	57,831	57,925	+0.2	1,405,440	1,346,802	−4.2
Leather and its products	**344**	**109,147**	**113,929**	(1)	**2,443,489**	**2,635,803**	(1)
Leather	134	27,353	27,521	+0.6	671,158	676,651	+0.8
Boots and shoes	210	81,794	86,408	+5.6	1,772,331	1,959,152	+10.5

(See footnotes at end of table)

TABLE 1.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS IN IDENTICAL ESTABLISHMENTS DURING **ONE WEEK** EACH IN JUNE AND JULY, 1928—Con.

Industry	Establishments	Number on pay roll		Per cent of change	Amount of pay roll		Per cent of change
		June, 1928	July, 1928		June, 1928	July, 1928	
Paper and printing	**930**	**179,721**	**179,621**	(1)	**$5,891,865**	**$5,791,570**	(1)
Paper and pulp	221	58,430	58,160	−0.5	1,539,876	1,498,929	−2.7
Paper boxes	187	18,855	18,731	−0.7	435,972	416,339	−4.5
Printing, book and job	311	52,329	53,040	+1.4	1,848,588	1,853,427	+0.3
Printing, newspapers	211	50,117	49,690	−0.9	2,067,429	2,022,875	−2.2
Chemicals and allied products	**328**	**83,180**	**83,137**	(1)	**2,487,742**	**2,509,158**	(1)
Chemicals	124	30,894	30,390	−1.6	854,711	832,695	−2.6
Fertilizers	149	7,605	7,637	+0.4	162,111	162,367	+0.2
Petroleum refining	55	44,681	45,110	+1.0	1,470,920	1,514,096	+2.9
Stone, clay, and glass products	**908**	**124,468**	**121,517**	(1)	**3,231,021**	**3,104,659**	(1)
Cement	108	26,910	27,041	+0.5	791,377	808,443	+2.2
Brick, tile, and terra cotta	606	41,869	42,205	+0.8	1,052,086	1,039,269	−1.2
Pottery	67	14,184	12,869	−9.3	344,864	287,989	−16.5
Glass	127	41,505	39,402	−5.1	1,042,694	968,958	−7.1
Metal products, other than iron and steel	**216**	**51,271**	**50,942**	(1)	**1,393,217**	**1,332,988**	(1)
Stamped and enameled ware	71	19,401	18,915	−2.5	469,916	431,173	−8.2
Brass, bronze, and copper products	145	31,870	32,027	+0.5	923,301	901,815	−2.3
Tobacco products	**257**	**62,091**	**58,756**	(1)	**1,048,819**	**992,028**	(1)
Chewing and smoking tobacco and snuff	27	8,105	7,563	−6.7	131,562	120,299	−8.7
Cigars and cigarettes	230	53,986	51,193	−5.2	917,257	871,729	−5.0
Vehicles for land transportation	**1,216**	**577,361**	**574,608**	(1)	**18,353,960**	**17,807,216**	(1)
Automobiles	212	409,837	409,365	−0.1	13,300,569	13,021,406	−2.1
Carriages and wagons	61	1,698	1,726	+1.6	40,087	40,145	+0.1
Car building and repairing, electric-railroad	374	25,072	24,718	−1.4	780,072	762,061	−2.3
Car building and repairing, steam-railroad	569	140,754	138,799	−1.4	4,233,232	3,983,604	−5.9
Miscellaneous industries	**393**	**250,723**	**251,847**	(1)	**7,537,868**	**7,367,677**	(1)
Agricultural implements	82	26,516	25,864	−2.5	799,008	761,348	−4.7
Electrical machinery, apparatus, and supplies	174	120,146	119,392	−0.6	3,624,600	3,498,801	−3.5
Pianos and organs	41	6,571	5,917	−10.0	188,230	169,369	−10.0
Rubber boots and shoes	12	16,745	17,849	+6.6	400,549	411,033	+2.6
Automobile tires	45	56,885	59,438	+4.5	1,809,080	1,842,860	+1.9
Shipbuilding	39	23,860	23,387	−2.0	716,401	684,266	−4.5
All industries	**11,130**	**3,090,989**	**3,062,147**	(1)	**83,547,410**	**81,146,928**	(1)

Recapitulation by Geographic Divisions

GEOGRAPHIC DIVISIONS							
New England	1,344	367,999	367,941	−(2)	$9,001,601	$8,919,232	−0.9
Middle Atlantic	2,608	809,508	800,546	−1.1	23,085,468	22,376,140	−3.1
East North Central	2,996	1,099,726	1,093,624	−0.6	33,241,477	32,162,890	−3.2
West North Central	1,011	160,585	158,725	−1.2	4,155,359	4,028,308	−3.1
South Atlantic	1,296	304,253	297,187	−2.3	5,830,263	5,584,412	−4.2
East South Central	553	113,508	109,401	−3.6	2,164,185	2,070,343	−4.3
West South Central	454	82,168	83,178	+1.2	1,749,738	1,776,508	+1.5
Mountain	196	29,550	29,756	+0.7	822,064	812,838	−1.1
Pacific	672	123,692	121,789	−1.5	3,497,255	3,416,257	−2.3
All divisions	**11,130**	**3,090,989**	**3,062,147**	(1)	**83,547,410**	**81,146,928**	(1)

[1] The per cent of change has not been computed for the reason that the figures in the preceding columns are unweighted and refer only to the establishments reporting; for the weighted per cent of change, wherein proper allowance is made for the relative importance of the several industries, so that the figures may represent all establishments of the country in the industries here represented, see Table 2.

[2] Less than one-tenth of 1 per cent.

7028°—28——11

TABLE 2.—PER CENT OF CHANGE, JUNE TO JULY, 1928—12 GROUPS OF INDUSTRIES AND TOTAL OF ALL INDUSTRIES

[Computed from the index numbers of each group, which are obtained by weighing the index numbers of the several industries of the group, by the number of employees, or wages paid, in the industries]

Group	Per cent of change, June to July, 1928		Group	Per cent of change, June to July, 1928	
	Number on pay roll	Amount of pay roll		Number on pay roll	Amount of pay roll
Food and kindred products	+0.5	+0.4	Metal products, other than iron and steel	−0.3	−3.7
Textiles and their products	−3.3	−4.6	Tobacco products	−5.4	−5.4
Iron and steel and their products	−0.8	−4.5	Vehicles for land transportation	−0.7	−3.8
Lumber and its products	−1.1	−3.1	Miscellaneous industries	−0.2	−3.0
Leather and its products	+4.3	+7.4			
Paper and printing	(1)	−1.8	**All industries**	**−1.1**	**−3.1**
Chemicals and allied products	−0.5	−0.2			
Stone, clay, and glass products	−3.0	−5.4			

[1] No change.

Comparison of Employment and Pay-roll Totals in July, 1928, with July, 1927

THE level of employment in manufacturing industries in July, 1928, was 3 per cent lower than in July, 1927, and pay-roll totals were 1.9 per cent smaller.

The vehicle group of industries for the third successive month was the only one of the 12 groups of industries which showed increased employment over this 12-month interval. This was due in each instance to the notably high level of employment of the automobile industry in 1928. Decreased employment in the remaining 11 groups ranged from 0.1 per cent in the nonferrous metal group to 8.7 per cent in the tobacco group.

The outstanding increases in employment over this 12-month interval in separate industries were 28.3 per cent in automobiles, 21.3 per cent in agricultural implements, 14.1 per cent in pottery, and 11.4 per cent in machine tools.

The significant decreases in employment in July, 1928, as compared with July, 1927, were 20.8 per cent in shipbuilding, 18.4 per cent in pianos and organs, 14.3 per cent, each, in cotton goods and steam fittings, and from 11 per cent to 12.7 per cent in petroleum refining, cane-sugar refining, brick, and cast-iron pipe.

The East North Central geographic division reported 8.2 per cent more employees in July, 1928, than in July, 1927, but each of the remaining eight divisions showed decreased employment ranging from 1 1 per cent in the West North Central States to 8.8 per cent in the New England States.

TABLE 3.—COMPARISON OF EMPLOYMENT AND PAY-ROLL TOTALS, JULY, 1928, WITH JULY, 1927

[The per cents of change for each of the 12 groups of industries and for the total of all industries are weighted in the same manner as are the per cents of change in Table 2]

Industry	Per cent of change, July, 1928, compared with July, 1927	
	Number on pay roll	Amount of pay roll
Food and kindred products	**−2.8**	**−1.9**
Slaughtering and meat packing	−3.2	−2.8
Confectionery	−5.5	−7.4
Ice cream	+0.9	+4.0
Flour	−2.5	+2.5
Baking	−0.9	−0.8
Sugar refining, cane	−11.1	−6.4
Textiles and their products	**−7.0**	**−10.1**
Cotton goods	−14.3	−20.2
Hosiery and knit goods	−4.4	−5.7
Silk goods	−3.9	−1.8
Woolen and worsted goods	−2.1	−4.9
Carpets and rugs	−5.7	−11.9
Dyeing and finishing textiles	−2.6	−3.5
Clothing, men's	−7.7	−12.4
Shirts and collars	−4.7	−14.1
Clothing, women's	+0.5	−3.9
Millinery and lace goods	−3.8	−6.0
Iron and steel and their products	**−1.6**	**+2.4**
Iron and steel	−3.0	+3.0
Cast-iron pipe	−12.7	−18.6
Structural ironwork	−0.6	+2.2
Foundry and machine-shop products	−1.0	+1.8
Hardware	−5.8	−3.4
Machine tools	+11.4	+18.9
Steam fittings and steam and hot-water heating apparatus	−14.3	−11.5
Stoves	+4.6	+1.2
Lumber and its products	**−5.3**	**−4.5**
Lumber, sawmills	−5.7	−4.0
Lumber, millwork	−3.0	−2.4
Furniture	−5.0	−7.4
Leather and its products	**−4.6**	**−7.6**
Leather	−1.7	−1.5
Boots and shoes	−5.6	−10.2
Paper and printing	**−0.3**	**+1.3**
Paper and pulp	−3.0	−2.0
Paper boxes	−4.0	−0.9
Printing, book and job	+1.3	+2.9
Printing, newspapers	+1.7	+2.8
Chemicals and allied products	**−4.1**	**−2.0**
Chemicals	−1.4	−0.2
Fertilizers	+6.5	+6.3
Petroleum refining	−11.0	−6.2
Stone, clay, and glass products	**−4.3**	**−3.6**
Cement	−9.0	−6.1
Brick, tile, and terra cotta	−11.6	−13.4
Pottery	+14.1	+9.7
Glass	−0.3	+3.5
Metal products, other than iron and steel	**−0.1**	**+3.3**
Stamped and enameled ware	+0.1	−3.3
Brass, bronze, and copper products	−0.1	+4.1
Tobacco products	**−8.7**	**−9.3**
Chewing and smoking tobacco and snuff	−5.7	−9.9
Cigars and cigarettes	−9.3	−9.2
Vehicles for land transportation	**+7.5**	**+9.5**
Automobiles	+28.3	+32.5
Carriages and wagons	+1.8	+3.4
Car building and repairing, electric-railroad	−7.5	−4.9
Car building and repairing, steam-railroad	−8.2	−7.7
Miscellaneous industries	**−7.7**	**−8.6**
Agricultural implements	+21.3	+29.2
Electrical machinery, apparatus, and supplies	−2.7	+1.7
Pianos and organs	−18.4	−14.9
Rubber boots and shoes	+4.0	−2.9
Automobile tires	+5.4	+6.7
Shipbuilding	−20.8	−22.4
All industries	**−3.0**	**−1.9**

Recapitulation by Geographic Divisions

GEOGRAPHIC DIVISION		
New England	−8.8	−8.8
Middle Atlantic	−5.6	−4.0
East North Central	+8.2	+12.2
West North Central	−1.1	+0.1
South Atlantic	−5.6	−5.2
East South Central	−4.8	−4.6
West South Central	−3.3	−2.2
Mountain	−2.8	−1.7
Pacific	−2.9	+0.4
All divisions	**−3.0**	**−1.9**

Per Capita Earnings

PER CAPITA earnings in July, 1928, for employees in the combined 54 industries surveyed were 2.1 per cent lower than in June, 1928, and 1.1 per cent higher than in July, 1927.

Increases in per capita earnings in July, 1928, as compared with June, 1928, were shown in 13 of the 54 industries, the notable increases having been in the boot and shoe, cast-iron pipe, ice cream, women's clothing, petroleum refining, cement, and flour industries. The outstanding decreases were in the pottery, knit goods, shirt, stamped ware, stove, and iron and steel industries.

Employees in 32 industries were averaging higher earnings per week in July, 1928, than in July, 1927, the significant gains over this 12-month period having been in the machine tool, iron and steel, agricultural implement, petroleum refining, flour, and cane-sugar refining industries. The pronounced decreases in July, 1928, as compared with July, 1927, were in the shirt, cotton goods, cast-iron pipe, carpet, rubber boot, and men's clothing industries.

TABLE 4.—COMPARISON OF PER CAPITA EARNINGS, JULY, 1928, WITH JUNE, 1928, AND JULY, 1927

Industry	Per cent of change July, 1928, compared with—		Industry	Per cent of change July, 1928, compared with—	
	June, 1928	July, 1927		June, 1928	July, 1927
Boots and shoes	+4.6	−5.1	Paper and pulp	−2.2	+0.8
Cast-iron pipe	+3.5	−6.8	Structural ironwork	−2.2	+2.7
Ice cream	+3.2	+2.9	Agricultural implements	−2.3	+6.4
Clothing, women's	+3.0	−4.6	Automobile tires	−2.5	+1.2
Petroleum refining	+1.9	+5.3	Dyeing and finishing textiles	−2.5	−1.0
Cement	+1.7	+3.4	Hardware	−2.5	+2.6
Flour	+1.4	+4.9	Woolen and worsted goods	−2.5	−2.8
Cotton goods	+0.9	−6.9	Shipbuilding	−2.6	−1.9
Clothing, men's	+0.6	−5.5	Brass, bronze, and copper products	−2.8	+4.3
Carpets and rugs	+0.3	−6.7	Electrical machinery, apparatus, and supplies	−2.9	+4.5
Sugar refining, cane	+0.3	+4.9	Foundry and machine-shop products	−3.0	+2.8
Cigars and cigarettes	+0.2	+0.1	Lumber, millwork	−3.6	+0.6
Leather	+0.2	+0.3	Rubber boots and shoes	−3.7	−6.7
Pianos and organs	−[1]	+4.0	Paper boxes	−3.8	+3.4
Baking	−0.3	[2]	Machine tools	−4.0	+6.6
Fertilizers	−0.3	−0.2	Millinery and lace goods	−4.0	−2.1
Slaughtering and meat packing	−0.4	+0.4	Silk goods	−4.1	+2.2
Car building and repairing, electric-railroad	−1.0	+2.8	Furniture	−4.3	−2.1
Chemicals	−1.0	+1.4	Confectionery	−4.4	−1.9
Lumber, sawmills	−1.0	+1.5	Car building and repairing, steam-railroad	−4.6	+0.7
Printing, book and job	−1.1	+1.5	Iron and steel	−4.8	+6.4
Printing, newspapers	−1.3	+1.1	Stoves	−5.1	−3.0
Carriages and wagons	−1.5	+1.6	Stamped and enameled ware	−5.9	−3.5
Automobiles	−2.0	+3.5	Shirts and collars	−6.0	−9.5
Brick, tile, and terra cotta	−2.0	−2.2	Hosiery and knit goods	−6.3	−1.4
Chewing and smoking tobacco and snuff	−2.0	−4.4	Pottery	−7.9	−3.6
Glass	−2.1	+4.2			
Steam fittings and steam and hot-water heating apparatus	−2.1	+3.0			

[1] Less than one-tenth of 1 per cent. [2] No change.

Wage Changes

FORTY-ONE establishments in 21 industries reported wage-rate increases made during the month ending July 15, 1928. These increases averaged 4 per cent and affected 3,449 employees, being 21 per cent of the total employees in the establishments concerned.

Nineteen establishments in 12 industries reported wage-rate decreases made during the same period. These decreases averaged 10.4 per cent and affected 2,293 employees, being 64 per cent of the total employees in the establishments concerned.

TABLE 5.—WAGE ADJUSTMENTS OCCURRING BETWEEN JUNE 15 AND JULY 15, 1928

Industry	Establishments		Per cent of increase or decrease in wage rates		Employees affected		
	Total number reporting	Number reporting increase or decrease in wage rates	Range	Average	Total number	Per cent of employees	
						In establishments reporting increase or decrease in wage rates	In all establishments reporting
Increases							
Flour	323	1	5.0	5.0	15	47	(1)
Baking	650	1	6.5	6.5	41	6	(1)
Silk goods	187	1	5.0	5.0	458	97	1
Clothing, men's	289	1	9.0	9.0	15	5	(1)
Clothing, women's	205	1	1.0	1.0	30	11	(1)
Iron and steel	197	4	2.0- 3.0	2.5	733	43	(1)
Foundry and machine-shop products	975	7	2.5-10.0	6.7	152	6	(1)
Hardware	70	1	2.2	2.2	18	20	(1)
Machine tools	151	2	3.0- 5.0	3.4	37	14	(1)
Lumber, sawmills	463	1	10.0	10.0	146	100	(1)
Paper and pulp	221	1	7.5	7.5	20	15	(1)
Paper boxes	187	2	10.0-19.3	17.6	37	12	(1)
Printing, book and job	311	3	1.0-12.0	9.5	49	8	(1)
Printing, newspapers	211	3	2.0- 2.5	2.0	284	25	1
Chemicals	124	2	5.0-10.0	7.8	187	9	1
Fertilizers	149	1	11.0	11.0	24	80	(1)
Glass	127	1	4.0	4.0	26	4	(1)
Automobiles	212	1	5.0	5.0	20	7	(1)
Car building and repairing, electric-railroad	374	3	1.5-2.0	2.0	948	48	4
Electrical machinery, apparatus, and supplies	174	3	1.0-5.0	4.0	195	8	(1)
Pianos and organs	41	1	5.0	5.0	10	5	(1)
Decreases							
Flour	323	1	10.0	10.0	11	30	(1)
Cotton goods	462	2	5.0-6.0	5.0	388	73	(1)
Iron and steel	197	1	2.5	2.5	40	5	(1)
Structural ironwork	162	1	8.0	8.0	60	97	(1)
Furniture	413	3	10.0-15.0	12.0	201	92	(1)
Lumber, millwork	264	1	7.5	7.5	150	100	(1)
Leather	134	1	5.0	5.0	181	100	1
Chemicals	124	1	16.7	16.7	25	100	(1)
Brick, tile, and terra cotta	606	1	10.0	10.0	47	94	(1)
Cigars and cigarettes	230	4	10.0-14.0	13.8	1,087	77	2
Car building and repairing, electric-railroad	374	2	9.7-10.0	10.0	30	77	(1)
Rubber boots and shoes	12	1	7.0	7.0	73	100	(1)

[1] Less than one-half of 1 per cent.

Indexes of Employment and Pay-roll Totals in Manufacturing Industries

INDEX numbers for July, June, and May, 1928, and for July, 1927, showing relatively the variation in number of persons employed and in pay-roll totals in each of the 54 industries surveyed by the Bureau of Labor Statistics, together with general indexes for the combined 12 groups of industries, appear in Table 6.

The general index of employment for July, 1928, is 84.7, this number being 1.1 per cent lower than the index for June, 1928, 0.9 per cent lower than the index for May, 1928, and 3 per cent lower than the index for July, 1927. The general index for pay-roll totals in July, 1928, is 87.4, this number being 3.1 per cent lower than the index for June, 1928, 3 per cent lower than the index for May, 1928, and 1.9 per cent lower than the index for July, 1927.

TABLE 6.—INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN MANUFACTURING INDUSTRIES—JULY, 1927, AND MAY, JUNE, AND JULY, 1928

[Monthly average, 1923=100]

Industry	Employment				Pay-roll totals			
	July, 1927	1928			July, 1927	1928		
		May	June	July		May	June	July
General index	**87.3**	**85.5**	**85.6**	**84.7**	**89.1**	**90.1**	**90.2**	**87.4**
Food and kindred products	**89.9**	**85.8**	**87.0**	**87.4**	**95.5**	**91.0**	**93.3**	**93.7**
Slaughtering and meat packing	83.6	78.0	80.6	80.9	88.2	81.5	85.8	85.7
Confectionery	73.1	72.9	71.8	69.1	80.7	80.4	81.2	74.7
Ice cream	107.6	92.6	99.7	108.6	116.6	100.1	107.8	121.3
Flour	87.6	84.6	82.8	85.4	88.5	88.5	86.7	90.7
Baking	103.0	101.5	102.9	102.1	108.7	107.6	108.9	107.8
Sugar refining, cane	100.0	81.1	79.6	88.9	101.0	85.1	84.4	94.5
Textiles and their products	**84.2**	**81.5**	**81.0**	**78.3**	**83.5**	**78.9**	**78.7**	**75.1**
Cotton goods	87.2	76.8	76.2	74.7	86.1	70.9	69.4	68.7
Hosiery and knit goods	91.0	92.8	92.0	87.0	98.9	105.7	105.4	93.3
Silk goods	96.7	97.1	96.2	92.9	101.3	107.0	107.5	99.5
Woolen and worsted goods	74.7	74.8	76.1	73.1	73.4	73.5	74.5	69.8
Carpets and rugs	95.0	94.4	91.2	89.6	88.3	84.6	79.0	77.8
Dyeing and finishing textiles	95.3	96.4	94.5	92.8	95.0	100.3	95.7	91.7
Clothing, men's	82.7	73.6	77.8	76.3	79.3	61.3	70.4	69.5
Shirts and collars	76.7	76.3	74.3	73.1	79.3	75.9	73.7	68.1
Clothing, women's	75.2	83.5	79.3	75.6	75.2	78.7	73.6	72.3
Millinery and lace goods	62.4	70.7	66.2	60.0	62.0	70.8	67.1	58.3
Iron and steel and their products	**85.1**	**84.3**	**84.4**	**83.7**	**84.6**	**91.5**	**90.7**	**86.6**
Iron and steel	90.4	89.3	88.6	87.7	86.3	98.0	94.3	88.9
Cast-iron pipe	98.1	89.4	89.6	85.6	100.6	89.5	82.8	81.9
Structural ironwork	95.5	92.5	95.1	94.9	101.3	104.2	106.0	103.5
Foundry and machine-shop products	81.2	80.1	80.5	80.4	81.4	84.5	85.6	82.9
Hardware	79.4	77.3	77.8	74.8	83.1	84.0	85.7	80.3
Machine-tools	92.3	99.6	101.3	102.8	98.5	117.6	120.2	117.1
Steam fittings and steam and hot-water heating apparatus	91.1	81.7	81.4	78.1	92.7	87.8	87.2	82.0
Stoves	67.3	76.0	76.6	70.4	64.8	74.9	75.3	65.6
Lumber and its products	**83.7**	**79.3**	**80.2**	**79.3**	**89.4**	**87.5**	**88.1**	**85.4**
Lumber, sawmills	80.4	75.8	77.2	75.8	86.7	85.5	85.6	83.2
Lumber, millwork	89.3	85.7	86.4	86.6	94.1	93.0	95.0	91.8
Furniture	91.6	87.3	86.8	87.0	95.7	90.9	92.5	88.6
Leather and its products	**88.2**	**80.8**	**80.6**	**84.1**	**86.7**	**71.7**	**74.6**	**80.1**
Leather	88.2	87.4	86.2	86.7	87.8	87.8	85.8	86.5
Boots and shoes	88.2	78.6	78.8	83.3	86.3	65.2	70.1	77.5
Paper and printing	**101.8**	**101.7**	**101.5**	**101.5**	**109.0**	**112.2**	**112.4**	**110.4**
Paper and pulp	92.2	89.4	89.9	89.4	95.3	96.3	96.0	93.4
Paper boxes	95.0	91.4	91.8	91.2	103.8	104.2	107.7	102.9
Printing, book and job	101.6	102.3	101.4	102.9	111.6	114.8	114.4	114.8
Printing, newspapers	114.4	117.6	117.3	116.3	121.0	127.2	127.2	124.4
Chemicals and allied products	**89.4**	**87.8**	**86.1**	**85.7**	**95.1**	**94.8**	**93.4**	**93.2**
Chemicals	92.9	92.3	93.1	91.6	102.6	105.6	105.1	102.4
Fertilizers	64.5	86.5	68.4	68.7	76.5	98.9	81.1	81.3
Petroleum	95.7	82.4	84.3	85.2	92.2	82.0	84.1	86.5

TABLE 6.—INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN MANUFACTURING INDUSTRIES—JULY, 1927, AND MAY, JUNE, AND JULY, 1928—Continued

Industry	Employment				Pay-roll totals			
	July, 1927	1928			July, 1927	1928		
		May	June	July		May	June	July
Stone, clay, and glass products	**94.4**	**92.4**	**93.1**	**90.3**	**96.9**	**98.8**	**98.7**	**93.4**
Cement	93.3	82.3	84.5	84.9	97.5	88.8	89.6	91.6
Brick, tile, and terra cotta	103.5	89.7	90.8	91.5	106.9	92.5	93.7	92.6
Pottery	81.6	102.3	102.7	93.1	81.3	111.8	106.9	89.2
Glass	90.3	94.9	94.8	90.0	93.0	103.7	103.7	96.3
Metal products, other than iron and steel	**89.5**	**90.2**	**89.7**	**89.4**	**86.9**	**93.4**	**92.3**	**88.9**
Stamped and enameled ware	82.8	87.5	85.0	82.9	78.4	86.3	82.6	75.8
Brass, bronze, and copper products	92.5	91.4	91.9	92.4	90.0	96.0	95.9	93.7
Tobacco products	**84.6**	**80.9**	**81.6**	**77.2**	**86.7**	**78.0**	**83.2**	**78.7**
Chewing and smoking tobacco and snuff	87.3	88.2	88.2	82.3	96.4	90.6	95.2	86.9
Cigars and cigarettes	84.3	79.9	80.7	76.5	85.6	76.5	81.8	77.7
Vehicles for land transportation	**82.3**	**89.0**	**89.1**	**88.5**	**81.4**	**94.8**	**92.6**	**89.1**
Automobiles	95.3	122.4	122.4	122.3	91.9	131.3	124.4	121.8
Carriages and wagons	67.6	64.5	67.8	68.8	73.6	68.4	76.0	76.1
Car building and repairing, electric-railroad	90.3	85.4	84.7	83.5	90.4	90.2	88.0	86.0
Car building and repairing, steam-railroad	74.0	68.7	68.9	67.9	74.3	72.3	72.9	68.6
Miscellaneous industries	**94.2**	**86.9**	**87.1**	**86.9**	**99.5**	**91.2**	**93.7**	**90.9**
Agricultural implements	85.3	105.5	106.1	103.5	93.1	125.8	126.2	120.3
Electrical machinery, apparatus, and supplies	92.0	88.9	90.1	89.5	93.6	95.9	98.7	95.2
Pianos and organs	79.2	72.9	71.8	64.6	79.0	76.1	74.7	67.2
Rubber boots and shoes	80.6	85.5	78.6	83.8	90.2	91.4	85.3	87.6
Automobile tires	111.4	109.5	112.4	117.4	114.2	113.6	119.5	121.8
Shipbuilding	93.3	76.1	75.4	73.9	100.1	79.1	81.3	77.7

Table 7 shows the general index of employment in manufacturing industries and the general index of pay-roll totals, by months, from January, 1923, to July, 1928.

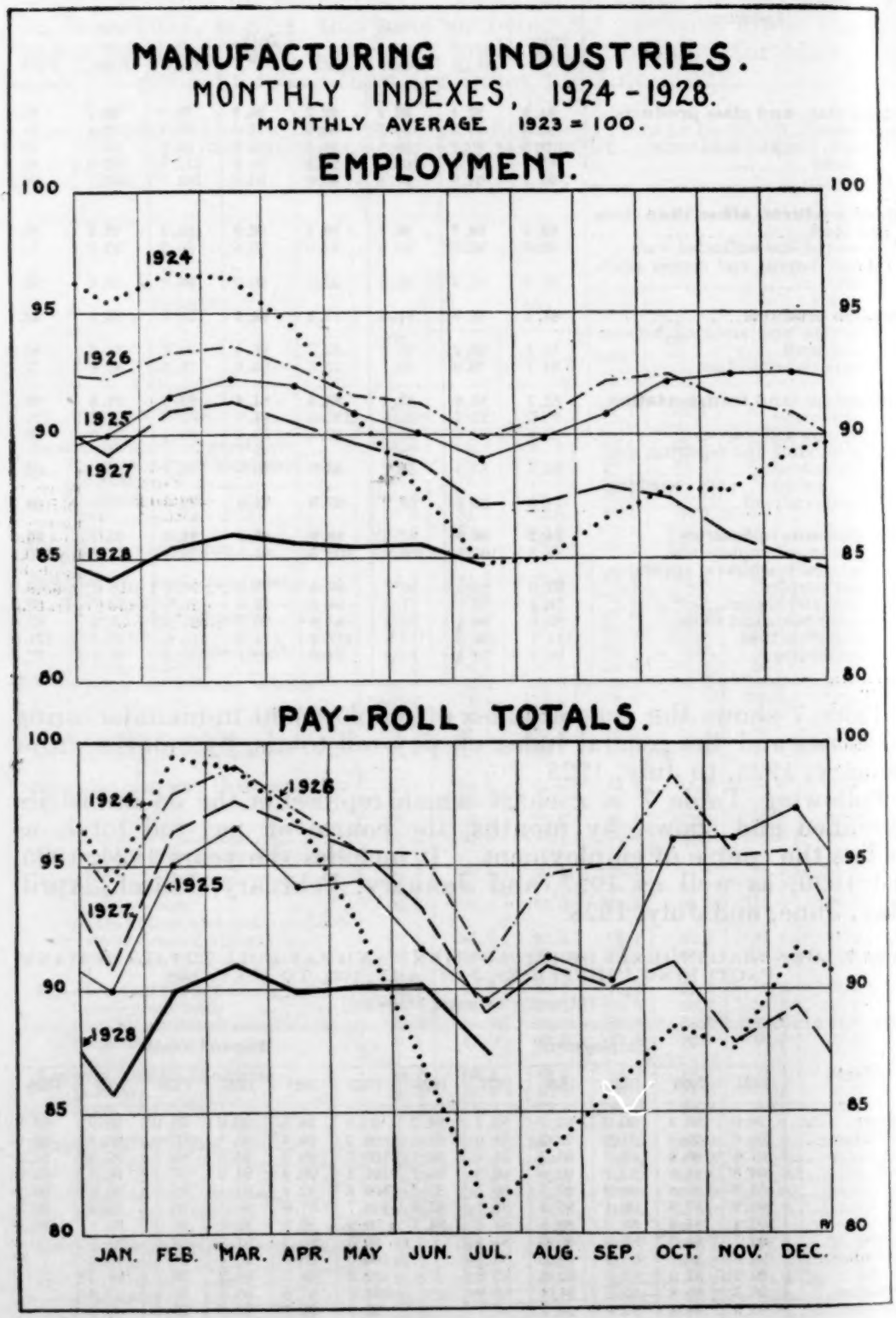
Following Table 7 is a chart which represents the 54 industries combined and shows, by months, the course of pay-roll totals as well as the course of employment. It includes the years 1924, 1925, and 1926, as well as 1927, and January, February, March, April, May, June, and July, 1928.

TABLE 7.—GENERAL INDEXES OF EMPLOYMENT AND PAY-ROLL TOTALS IN MANUFACTURING INDUSTRIES, JANUARY, 1923, TO JULY, 1928

[Monthly average, 1923=100]

Month	Employment						Pay-roll totals					
	1923	1924	1925	1926	1927	1928	1923	1924	1925	1926	1927	1928
January	98.0	95.4	90.0	92.3	89.4	84.2	91.8	94.5	90.0	93.9	90.9	85.8
February	99.6	96.6	91.6	93.3	91.0	85.5	95.2	99.4	95.1	97.9	96.4	90.0
March	101.8	96.4	92.3	93.7	91.4	86.1	100.3	99.0	96.6	99.1	97.7	91.2
April	101.8	94.5	92.1	92.8	90.6	85.7	101.3	96.9	94.2	97.2	96.6	89.9
May	101.8	90.8	90.9	91.7	89.7	85.5	104.8	92.4	94.4	95.6	95.6	90.1
June	101.9	87.9	90.1	91.3	89.1	85.6	104.7	87.0	91.7	95.5	93.3	90.2
July	100.4	84.8	89.3	89.8	87.3	84.7	99.9	80.8	89.6	91.2	89.1	87.4
August	99.7	85.0	89.9	90.7	87.4	.....	99.3	83.5	91.4	94.6	91.0	.....
September	99.8	86.7	90.9	92.2	88.0	.....	100.0	86.0	90.4	95.1	90.1	.....
October	99.3	87.9	92.3	92.5	87.6	.....	102.3	88.5	96.2	98.6	91.2	.....
November	98.7	87.8	92.5	91.4	85.9	.....	101.0	87.6	96.2	95.4	87.8	.....
December	96.9	89.4	92.6	90.9	85.1	.....	98.9	91.7	97.3	95.6	89.3	.....
Average	**100.0**	**90.3**	**91.2**	**91.9**	**88.5**	[1] **85.3**	**100.0**	**90.6**	**93.6**	**95.8**	**92.4**	[1] **89.2**

[1] Average for 7 months.


MANUFACTURING INDUSTRIES.
MONTHLY INDEXES, 1924-1928.
MONTHLY AVERAGE 1923 = 100.
EMPLOYMENT.
100
95
90
85
80
1924
1926
1925
1927
1928
PAY-ROLL TOTALS.
JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEP. OCT. NOV. DEC.

Proportion of Time Worked and Force Employed in Manufacturing Industries in July, 1928

REPORTS as to time worked and force employed in July were made by 9,590 establishments. Employees in 79 per cent of these establishments were working full time and employees in 20 per cent these were working part time, while 1 per cent were idle; 30 per cent of the establishments had a full normal force of employees and 69 per cent were operating with reduced forces.

The establishments in operation were employing an average of 87 per cent of a normal force of employees who were working an average of 96 per cent of full time. These percentages show a decrease of 1 per cent in average operating time, as compared with the June report, with no change in average force employed.

TABLE 8.—ESTABLISHMENTS WORKING FULL AND PART TIME AND EMPLOYING FULL AND PART WORKING FORCE IN JULY, 1928

Industry	Establishments reporting		Operating establishments only					
			Per cent of establishments in which employees worked—		Average per cent of full time worked by employees in establishments operating	Per cent of establishments operating with—		Average per cent of full normal force employed in establishments operating
	Total number	Per cent idle	Full time	Part time		Full normal force	Part normal force	
Food and kindred products	**1,562**	**1**	**87**	**12**	**97**	**38**	**61**	**86**
Slaughtering and meat packing	146	------	92	8	99	52	48	90
Confectionery	258	4	57	39	91	9	87	66
Ice cream	208	------	100	(1)	100	34	66	88
Flour	298	1	88	11	97	40	60	87
Baking	638	(1)	93	7	99	48	52	94
Sugar refining, cane	14	------	79	21	93	7	93	84
Textiles and their products	**1,490**	**1**	**74**	**25**	**95**	**32**	**67**	**84**
Cotton goods	397	2	69	29	92	29	69	85
Hosiery and knit goods	181	2	72	27	94	35	63	86
Silk goods	159	------	87	13	98	37	63	89
Woolen and worsted goods	167	1	79	20	97	37	63	78
Carpets and rugs	24	------	67	33	89	25	75	92
Dyeing and finishing textiles	76	------	68	32	95	22	78	86
Clothing, men's	220	3	73	24	96	31	66	82
Shirts and collars	74	------	65	35	94	36	64	87
Clothing, women's	143	1	78	21	96	31	68	84
Millinery and lace goods	49	------	76	24	95	14	86	74
Iron and steel and their products	**1,646**	(1)	**71**	**29**	**95**	**26**	**73**	**84**
Iron and steel	170	1	59	41	90	23	76	84
Cast-iron pipe	34	------	74	26	93	26	74	77
Structural ironwork	155	------	87	13	99	29	71	88
Foundry and machine shop products	891	------	69	31	95	25	75	83
Hardware	66	3	68	29	95	12	85	80
Machine tools	134	------	86	14	100	34	66	95
Steam fittings and steam and hot-water heating apparatus	96	1	71	28	97	33	66	85
Stoves	100	4	59	37	93	33	63	84
Lumber and its products	**1,020**	**1**	**75**	**24**	**96**	**24**	**75**	**83**
Lumber, sawmills	424	2	79	19	97	30	68	83
Lumber, millwork	228	------	77	23	96	19	81	80
Furniture	368	(1)	69	30	94	19	80	85

[1] Less than one-half of 1 per cent.

TABLE 8.—ESTABLISHMENTS WORKING FULL AND PART TIME AND EMPLOYING FULL AND PART WORKING FORCE IN JULY, 1928—Continued

Industry	Establishments reporting		Operating establishments only					
			Per cent of establishments in which employees worked—		Average per cent of full time worked by employees in establishments operating	Per cent of establishments operating with—		Average per cent of full normal force employed in establishments operating
	Total number	Per cent idle	Full time	Part time		Full normal force	Part normal force	
Leather and its products	**316**	**1**	**82**	**17**	**97**	**32**	**67**	**87**
Leather	124	2	83	15	98	35	63	84
Boots and shoes	192	.....	82	18	97	30	70	88
Paper and its products	**752**	(1)	**83**	**16**	**98**	**41**	**59**	**94**
Paper and pulp	172	.....	81	19	97	34	66	92
Paper boxes	162	1	62	37	94	23	76	84
Printing, book and job	269	(1)	88	12	99	38	61	97
Printing, newspapers	149	.....	100	.....	100	72	28	101
Chemicals and allied products	**295**	.....	**82**	**18**	**97**	**18**	**82**	**74**
Chemicals	113	.....	88	12	99	36	64	92
Fertilizers	144	.....	74	26	95	5	95	41
Petroleum refining	38	.....	97	3	100	16	84	76
Stone, clay, and glass products	**619**	**2**	**85**	**13**	**97**	**25**	**73**	**86**
Cement	92	.....	99	1	100	21	79	85
Brick, tile, and terra cotta	366	2	83	15	97	22	76	83
Pottery	62	6	60	34	91	34	60	86
Glass	99	1	96	3	100	35	64	89
Metal products, other than iron and steel	**183**	.....	**79**	**21**	**96**	**27**	**73**	**88**
Stamped and enameled ware	54	.....	78	22	96	31	69	88
Brass, bronze, and copper products	129	.....	79	21	97	25	75	89
Tobacco products	**229**	**4**	**74**	**22**	**95**	**37**	**59**	**92**
Chewing and smoking tobacco and snuff	25	4	80	16	94	32	64	83
Cigars and cigarettes	204	4	73	23	95	38	58	93
Vehicles for land transportation	**1,127**	.....	**85**	**15**	**98**	**25**	**75**	**93**
Automobiles	192	.....	82	18	98	38	62	98
Carriages and wagons	59	.....	78	22	97	19	81	71
Car building and repairing, electric-railroad	363	.....	97	3	100	28	72	89
Car building and repairing, steam-railroad	513	.....	78	22	97	19	81	81
Miscellaneous industries	**351**	**1**	**79**	**20**	**97**	**27**	**72**	**86**
Agricultural implements	77	.....	68	32	95	27	73	94
Electrical machinery, apparatus, and supplies	154	1	85	14	99	27	71	86
Pianos and organs	31	3	52	45	91	23	74	68
Rubber boots and shoes	12	.....	67	33	95	25	75	88
Automobile tires	43	.....	95	5	99	47	53	98
Shipbuilding	34	.....	91	9	99	12	88	59
All industries	**9,590**	**1**	**79**	**20**	**96**	**30**	**69**	**87**

[1] Less than one-half of 1 per cent.

Employment on Steam Railroads in the United States

THE monthly trend of employment from January, 1923, to June, 1928, on Class I railroads—that is, all roads having operating revenues of $1,000,000 or over—is shown by the index numbers published in Table I. These index numbers are constructed from monthly reports of the Interstate Commerce Commission, using the monthly average for 1923 as 100.

TABLE 1.—INDEX OF EMPLOYMENT ON CLASS I STEAM RAILROADS IN THE UNITED STATES—JANUARY, 1923, TO JUNE, 1928

[Monthly average, 1923=100]

Month	1923	1924	1925	1926	1927	1928
January	94.6	93.1	91.9	92.1	91.8	85.8
February	94.8	93.2	91.7	92.3	91.6	85.5
March	96.6	93.6	91.5	92.9	92.1	86.4
April	98.0	95.0	92.8	95.0	93.6	88.1
May	100.9	95.3	94.0	96.3	95.5	90.8
June	102.9	94.2	94.8	97.6	97.0	----------
July	104.0	94.3	95.5	98.9	97.1	----------
August	105.1	95.1	95.8	98.7	95.6	----------
September	103.6	95.8	96.0	98.8	95.2	----------
October	103.1	96.9	96.8	99.4	95.0	----------
November	101.1	95.1	95.2	97.3	92.0	----------
December	95.5	92.3	93.3	94.4	88.3	----------
Average	**100.0**	**94.5**	**94.1**	**96.1**	**93.7**	[1] 87.3

[1] Average for 5 months.

Table 2 shows the total number of employees on the 15th day each of June, 1928, May, 1928, and June, 1927, and the pay-roll totals for each of the entire months considered, by principal occupational groups and various important occupations.

In these tabulations data for the occupational group reported as "executives, officials, and staff assistants" are omitted.

TABLE 2.—EMPLOYMENT AND TOTAL MONTHLY EARNINGS OF RAILROAD EMPLOYEES—JUNE, 1927, AND MAY AND JUNE, 1928

[From monthly reports of Interstate Commerce Commission. As data for only the more important occupations are shown separately, the group totals are not the sum of the items under the respective groups]

Occupation	Number of employees at middle of month			Total earnings		
	June, 1927	May, 1928	June, 1928	June, 1927	May, 1928	June, 1928
Professional, clerical, and general	**281,851**	**271,169**	**271,403**	**$39,641,215**	**$39,483,423**	**$39,265,921**
Clerks	163,820	155,456	155,101	21,828,144	21,545,386	21,325,474
Stenographers and typists	25,313	24,655	24,758	2,199,365	3,203,427	3,208,779
Maintenance of way and structures	**482,453**	**434,304**	**456,296**	**45,110,703**	**40,983,742**	**42,532,329**
Laborers, extra gang and work train	90,911	74,063	82,351	7,342,991	6,014,613	6,531,955
Laborers, track, and roadway section	250,323	228,096	237,899	18,856,452	17,043,843	17,682,436
Maintenance of equipment and stores	**493,059**	**461,986**	**464,037**	**65,615,168**	**62,333,677**	**60,955,604**
Carmen	105,341	99,663	100,967	15,970,598	15,353,095	15,014,951
Machinists	59,032	56,169	56,022	9,422,292	9,001,987	8,739,115
Skilled trades helpers	108,541	101,072	101,858	12,282,934	11,560,982	11,295,939
Laborers (shops, engine houses, power plants, and stores)	41,373	37,966	37,919	3,905,597	3,675,604	3,547,424
Common laborers (shops, engine houses, power plants, and stores)	57,029	52,784	53,191	4,700,606	4,370,346	4,327,052

TABLE 2.—EMPLOYMENT AND TOTAL MONTHLY EARNINGS OF RAILROAD EMPLOYEES—JUNE, 1927, AND MAY AND JUNE, 1928—Continued

Occupation	Number of employees at middle of month			Total earnings		
	June, 1927	May, 1928	June, 1928	June, 1927	May, 1928	June, 1928
Transportation, other than train, engine, and yard	**205,918**	**196,593**	**198,204**	**$25,534,362**	**$25,093,495**	**$24,840,225**
Station agents	30,445	29,914	29,897	4,741,748	4,816,522	4,736,990
Telegraphers, telephoners, and towermen	24,665	23,310	23,400	3,731,747	3,684,608	3,578,121
Truckers (stations, warehouses, and platforms)	36,929	33,878	33,995	3,504,995	3,301,377	3,263,570
Crossing and bridge flagmen, and gatemen	22,003	21,368	21,394	1,703,355	1,647,339	1,642,943
Transportation (yardmasters, switch tenders, and hostlers)	**23,357**	**22,151**	**22,030**	**4,456,889**	**4,348,539**	**4,312,183**
Transportation, train, and engine	**317,818**	**306,621**	**306,892**	**62,918,817**	**62,814,924**	**61,262,531**
Road conductors	36,159	34,945	35,169	8,619,369	8,418,666	8,197,608
Road brakemen and flagmen	72,536	69,396	69,504	12,559,928	12,172,575	11,778,373
Yard brakemen and yard helpers	52,523	50,862	50,860	9,131,720	9,216,889	8,847,392
Road engineers and motormen	42,889	41,276	41,380	11,079,718	11,317,090	11,143,933
Road firemen and helpers	44,018	42,042	42,271	8,490,326	8,358,422	8,308,968
Total, all employees	**1,804,456**	**1,692,824**	**1,718,862**	**243,277,154**	**235,057,800**	**233,168,793**

Changes in Employment and Pay Rolls in Various States

THE FOLLOWING data as to changes in employment and pay rolls have been compiled from reports received from the various State labor offices:

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES

Monthly period

State and industry group	Per cent of change, May to June, 1928		State and industry group	Per cent of change, June to July, 1928	
	Employment	Pay roll		Employment	Pay roll
Illinois			**Iowa**		
Stone, clay, and glass products	+1.4	+2.4	Food and kindred products	−.8	
Metals, machinery, and conveyances	+2.1	+1.4	Textiles	−5.3	
Wood products	−1.8	−2.7	Iron and steel works	+1.4	
Furs and leather goods	+8.9	+11.6	Lumber products	+.4	
Chemicals, oils, paints, etc	0	−1.6	Leather products	+2.9	
Printing and paper goods	+1.0	+2.8	Paper products, printing and publishing	−3.4	
Textiles	−1.3	−3.4	Patent medicines, chemicals and compounds	+.7	
Clothing, millinery	+3.3	+15.0	Stone and clay products	+4.5	
Food, beverages, and tobacco	+4.0	+6.4	Tobacco and cigars	−2.1	
All manufacturing industries	+2.4	+3.0	Railway car shops	−1.0	
Trade, wholesale and retail	+2.8	+4.7	Various industries	−1.8	
Public utilities	+1.1	+3.1			
Coal mining	+2.4	+3.4	All industries	−.7	
Building and contracting	+11.5	+16.6			
All industries	+2.3	+3.5			

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

Monthly period—Continued

State and industry group	Per cent of change, June to July, 1928	
	Employment	Pay roll
Maryland		
Food products	+8.3	+4.5
Textiles	−1.7	−3.2
Iron and steel and their products	+.6	+3.0
Lumber and its products	−2.2	−10.6
Leather and its products	−13.6	−19.9
Rubber tires	+19.6	+12.8
Paper and printing	−.1	−4.1
Chemicals and allied products	+2.8	+.6
Stone, clay, and glass	−18.9	−21.1
Metal products other than iron and steel	+1.6	+3.4
Tobacco products	−6.6	−4.5
Machinery (not including transportation equipment)	−1.1	−3.9
Musical instruments	−42.1	−43.4
Transportation equipment	−9.3	−4.6
Car building and repairing	−.9	−13.5
Miscellaneous	−17.7	−19.9
All industries	−1.1	−2.9

State and industry group	Per cent of change, May to June, 1928	
	Employment	Pay roll
New Jersey		
Food and kindred products	−2.5	−2.7
Textiles and their products	−2.0	−2.3
Iron and steel and their products	+1.6	−.6
Lumber and its products	+.7	+1.1
Leather and its products	+1.8	+2.5
Tobacco products	+4.1	+3.9
Paper and printing	+1.6	+5.9
Chemicals and allied products	+.7	+2.2
Stone, clay, and glass products	−.9	+1.8
Metal products other than iron and steel	+.7	−4.4
Vehicles for land transportation	+3.0	+3.0
Miscellaneous	−.2	+1.0
All industries	+.2	+.1
New York		
Stone, clay and glass	+.4	+.2
Metals and machinery	+.3	+.9
Wood manufactures	−1.0	+.7
Furs, leather and rubber goods	+2.2	+7.2
Chemicals, oils, paints, etc	−.5	+.2
Paper	[1]	+.4
Printing and paper goods	−.9	−1.8
Textiles	−1.1	−1.9
Clothing and millinery	+.4	+5.2
Food and tobacco	+2.6	+3.0
Water, light and power	−.6	−1.0
All industries	+.3	+1.3

State and industry group	Employment—index numbers (1919–1923=100)	
	June, 1928	July, 1928
Massachusetts		
Boots and shoes	56.6	64.7
Bread and other bakery products	105.8	103.1
Cars and general shop construction and repairs, steam railroads	70.2	68.9
Clothing, men's and women's	84.0	83.0
Confectionery	77.4	74.5
Cotton goods	43.9	41.0
Dyeing and finishing textiles	97.6	96.3
Electrical machinery, apparatus and supplies	102.4	101.5
Foundry and machine-shop products	65.0	65.4
Furniture	98.2	96.0
Hosiery and knit goods	76.6	61.3
Jewelry	99.4	101.1
Leather, tanned, curried, and finished	81.3	81.4
Paper and wood pulp	91.6	90.3
Printing and publishing	106.0	102.8
Rubber footwear	82.5	96.9
Rubber goods, tires and tubes	85.9	85.4
Silk goods	105.7	104.7
Textile machinery and parts	51.1	49.4
Woolen and worsted goods	81.3	80.2
All industries	73.6	72.9

State and industry group	June to July, 1928	
	Employment	Pay roll
Oklahoma		
Cottonseed-oil mills	−68.2	−57.7
Food production:		
Bakeries	−4.4	−6.6
Confections	−11.1	−28.8
Creameries and dairies	−5.0	−10.3
Flour mills	+33.5	+29.6
Ice and ice cream	+9.8	+10.9
Meat and poultry	+3.3	+2.3
Lead and zinc:		
Mines and mills	+3.4	−4.2
Smelters	−6.6	−5.4
Metals and machinery:		
Auto repairs, etc	+16.3	+31.0
Machine shops and foundries	+25.3	+26.8
Tank construction and erection	+13.9	+23.4
Oil industry:		
Producing and gasoline manufacture	+10.1	+8.6
Refineries	+8.9	+13.9
Printing: Job work	+3.9	+5.7
Public utilities:		
Steam-railway shops	+.8	+.2
Street railways	+1.2	+2.3
Water, light, and power	+10.0	+6.1

[1] Change of less than 0.05 per cent.

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

Monthly period—Continued

State and industry group	Per cent of change, June to July, 1928	
	Employment	Pay roll
Oklahoma—Continued		
Stone, clay, and glass:		
Brick and tile	+3.4	+0.1
Cement and plaster	+2.2	−7.1
Crushed stone	−41.5	−13.9
Glass manufacture	+24.2	+29.1
Textiles and cleaning:		
Textile manufacture	−16.8	−9.4
Laundries, etc.	+6.4	+4.8
Woodworking:		
Sawmills	+1.9	−.5
Milkwork, etc.	+.3	−2.0
All industries	+5.4	+6.7
	Index numbers (1923–1925=100)	
	June, 1928	July, 1928
	Employment	
Pennsylvania		
Metal products	82.0	81.1
Transportation equipment	70.4	[1] 69.0
Textile products	96.3	91.9
Foods and tobacco	98.7	96.5
Stone, clay, and glass products	87.4	86.4
Lumber products	76.3	78.4
Chemical products	96.8	93.3
Leather and rubber products	98.2	97.1
Paper and printing	91.8	91.3
All industries	87.1	85.3
	Pay roll	
Metal products	85.8	76.6
Transportation equipment	74.5	[1] 65.6
Textile products	100.2	91.2
Foods and tobacco	101.2	97.0
Stone, clay, and glass products	89.8	80.1
Lumber products	73.9	76.6
Chemical products	104.6	99.4
Leather and rubber products	101.3	100.2
Paper and printing	105.6	101.3
All industries	89.9	82.1

State and industry group	Per cent of change, April to May, 1928	
	Employment	Pay roll
Wisconsin		
Manual		
Agriculture	−3.3	0
Logging	−33.2	−19.6
Mining	−5.5	+3.9
Stone crushing and quarrying	−4.4	+16.6
Manufacturing:		
Stone and allied industries	+15.7	+19.9
Metal	+.6	+3.5
Wood	−.7	−.8
Rubber	−1.3	−2.1
Leather	−.1	−1.0
Paper	−.7	+1.9
Textiles	−9.3	−3.2
Foods	+4.4	+6.0
Light and power	+7.9	+8.8
Printing and publishing	+.7	+.8
Laundering, cleaning and dyeing	+2.5	+1.1
Chemical (including soap, glue and explosives)	+2.3	−1.0
All manufacturing	+.1	+2.3
Construction:		
Building	+24.1	+29.3
Highway	+38.2	+43.2
Railroad	+31.1	+26.1
Marine, dredging, sewer digging	+17.3	+39.1
Communication:		
Steam railways	+6.4	+2.6
Electric railways	+4.4	+1.5
Express, telephone, and telegraph	+4.4	+3.9
Wholesale trade	+4.9	+10.7
Hotels and restaurants	+2.6	.....
Nonmanual		
Manufacturing, mines and quarries	−.3	−.3
Construction	+.7	−.1
Communication	+2.6	+.4
Wholesale trade	+6.3	+2.7
Retail trade—sales force only	−6.3	+8.6
Miscellaneous professional services	−.2	−13.0
Hotels and restaurants	−5.3	.....

[1] Preliminary figures.

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

Yearly period

State and industry groups	Per cent of change, June, 1927, to June, 1928	
	Employment	Pay roll
California		
Stone, clay and glass products	−9.5	−12.2
Metals, machinery and conveyances	−3.6	−2.4
Wood manufactures	−4.3	−1.4
Leather and rubber goods	−6.2	−7.0
Chemicals, oils, paints, etc	−9.5	−8.4
Printing and paper goods	−1.8	+.8
Textiles	−9.4	−11.1
Clothing, millinery, and laundering	−.5	−.9
Foods, beverages and tobacco	+13.7	+6.9
Water, light and power	+4.8	+5.0
Miscellaneous	−1.6	+.7
All industries	−1.1	−1.7
New York		
Stone, clay and glass	−11.4	−9.2
Metals and machinery	−4.6	−2.0
Wood manufactures	−11.0	−9.6
Furs, leathers, and rubber goods	−5.4	−6.9
Chemicals, oils, paints, etc	−4.2	−2.6
Paper	−1.1	−2.3
Printing and paper goods	−.4	+1.4
Textiles	−5.0	−8.9
Clothing and millinery	−5.5	−5.7
Food and tobacco	−5.3	−5.3
Water, light and power	−6.4	−8.7
All industries	−5.0	−4.0
	July, 1927, to July, 1928	
Oklahoma		
Cottonseed-oil mills	−84.3	−77.3
Food production:		
Bakeries	+2.6	+2.0
Confections	−20.0	−35.8
Creameries and dairies	+10.2	−13.7
Flour mills	−14.1	−15.8
Ice and ice cream	+50.1	+117.4
Meat and poultry	−2.8	−3.0
Lead and zinc:		
Mines and mills	−28.7	−39.5
Smelters	−2.0	−4.8
Metals and machinery:		
Auto repairs, etc	−25.5	−18.3
Machine shops and foundries	+3.9	−1.0
Tank construction and erection	−41.2	−52.0
Oil industry:		
Producing and gasoline manufacture	−23.5	−24.3
Refineries	+9.4	+6.0
Printing: Job work	−5.8	−2.6
Public utilities:		
Steam-railway shops	−15.3	−8.5
Street railways	+16.7	+10.2
Water, light and power	+54.2	+90.2
Stone, clay, and glass:		
Brick and tile	+26.1	+26.3
Cement and plaster	−6.7	−4.0
Crushed stone	−32.5	+1.6
Glass manufacture	−15.9	−18.1

State and industry groups	Per cent of change, July, 1927, to July, 1928	
	Employment	Pay roll
Oklahoma—Continued		
Textiles and cleaning:		
Textile manufacture	+62.9	+100.7
Laundries, etc	−15.8	−20.1
Woodworking:		
Sawmills	+151.9	+158.3
Mill work, etc	+26.7	+23.0
All industries	−2.5	−9.2
	Index numbers (1923–1925=100)	
	July, 1927	July, 1928
	Employment	
Pennsylvania		
Metal products	88.4	81.1
Transportation equipment	89.1	[2] 69.0
Textile products	95.9	91.9
Foods and tobacco	98.8	96.5
Stone, clay and glass products	93.5	86.4
Lumber products	87.2	78.4
Chemical products	97.7	93.3
Leather and rubber products	93.8	97.1
Paper and printing	94.4	91.3
All industries	92.0	85.3
	Pay roll	
Metal products	84.9	76.6
Transportation equipment	87.4	[2] 65.6
Textile products	96.4	91.2
Foods and tobacco	100.1	97.0
Stone, clay and glass products	90.2	80.1
Lumber products	90.1	76.6
Chemical products	100.0	99.4
Leather and rubber products	98.3	100.2
Paper and printing	101.5	101.3
All industries	90.3	82.1
	Per cent of change, May, 1927, to May, 1928	
	Employment	Pay roll
Wisconsin		
Manual		
Agriculture	−33.3	−54.2
Logging	−33.3	−27.5
Mining	−51.5	−45.9
Stone crushing and quarrying	−11.0	−16.7

[2] Preliminary figures.

PER CENT OF CHANGE IN EMPLOYMENT AND PAY ROLLS IN SPECIFIED STATES—Continued

Yearly period—Continued

State and industry groups	Per cent of change, May, 1927, to May, 1928	
	Employment	Pay roll
Wisconsin—Continued		
Manual—Continued		
Manufacturing:		
Stone and allied industries	+16.1	+5.6
Metal	−1.1	+5.0
Wood	−.9	−1.6
Rubber	+2.9	−7.4
Leather	−.5	−3.8
Paper	+1.5	+7.0
Textiles	−11.1	−15.6
Foods	−6.1	−4.4
Light and power	−2.6	+1.0
Printing and publishing	+.4	+.4
Laundering, cleaning, and dyeing	+1.2	+4.7
Chemical (including soap, glue, and explosives)	−7.1	−9.9
All manufacturing	−1.7	+.5
Construction:		
Building	−20.6	−22.4
Highway	−2.2	+12.1
Railroad	+19.6	+7.6
Wisconsin—Continued		
Manual—Continued		
Construction—Continued.		
Marine, dredging, sewer digging	−25.9	−19.8
Communication:		
Steam railways	−6.3	−1.8
Electric railways	−14.7	−8.7
Express, telephone, and telegraph	+9.4	+12.5
Wholesale trade	+2.2	−1.2
Hotels and restaurants	−6.1	.....
Nonmanual		
Manufacturing, mines and quarries	−2.0	+.7
Construction	−2.6	−3.7
Communication	−.3	−.2
Wholesale trade	+10.1	+8.9
Retail trade—sales force only	−5.6	+7.2
Miscellaneous professional services	+6.0	−3.1
Hotels and restaurants	−1.1	.....

WHOLESALE AND RETAIL PRICES

Retail Prices of Food in the United States

THE following tables are compiled from monthly reports of actual selling prices [1] received by the Bureau of Labor Statistics from retail dealers.

Table 1 shows for the United States retail prices of food July 15, 1927, and June 15 and July 15, 1928, as well as the percentage changes in the year and in the month. For example, the retail price per pound of sirloin steak was 43.6 cents on July 15, 1927; 47.4 cents on June 15, 1928; and 49.7 cents on July 15, 1928. These figures show increases of 14 per cent in the year and 5 per cent in the month.

The cost of the various articles of food combined shows a decrease of 0.4 per cent July 15, 1928, ascompared with July 15, 1927, and an increase of 0.1 per cent July 15, 1928, as compared with June 15, 1928.

TABLE 1.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE OR DECREASE, JULY 15, 1928, COMPARED WITH JUNE 15, 1928, AND JULY 15, 1927

[Percentage changes of five-tenths of 1 per cent and over are given in whole numbers]

Article	Unit	Average retail price on—			Per cent of increase (+) or decrease (−) July 15, 1928, compared with—	
		July 15, 1927	June 15, 1928	July 15, 1928	July 15, 1927	June 15, 1928
		Cents	*Cents*	*Cents*		
Sirloin steak	Pound	43.6	47.4	49.7	+14	+5
Round steak	do	37.9	41.6	43.9	+16	+6
Rib roast	do	31.7	34.7	36.0	+14	+4
Chuck roast	do	23.9	27.6	28.9	+21	+5
Plate beef	do	15.3	18.5	19.1	+25	+3
Pork chops	do	34.9	34.8	37.3	+7	+7
Bacon	do	46.6	43.2	43.9	−6	+2
Ham	do	54.6	51.7	53.4	−2	+3
Lamb, leg of	do	40.3	42.2	41.1	+2	−3
Hens	do	35.6	37.1	36.7	+3	−1
Salmon, canned, red	do	32.3	35.3	35.3	+9	0
Milk, fresh	Quart	14.0	14.0	14.1	+1	+1
Milk, evaporated	15–16 oz. can	11.5	11.1	11.1	−3	0
Butter	Pound	51.4	53.9	54.3	+6	+1
Oleomargarine (all butter substitutes)	do	28.0	27.3	27.2	−3	−0.4
Cheese	do	36.9	38.1	38.3	+4	+1
Lard	do	18.8	18.2	18.6	−1	+2
Vegetable lard substitute	do	25.0	24.9	24.9	−0.4	0
Eggs, strictly fresh	Dozen	36.9	38.8	41.6	+13	+7
Bread	Pound	9.3	9.2	9.2	−1	0

[1] In addition to monthly retail prices of food and coal, the bureau publishes the prices of gas and electricity from each of 51 cities for the dates for which these data are secured.

TABLE 1.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE OR DECREASE, JULY 15, 1928, COMPARED WITH JUNE 15, 1928, AND JULY 15, 1927—Continued

Article	Unit	Average retail price on—			Per cent of increase (+) or decrease (−) July 15, 1928, compared with—	
		July 15, 1927	June 15, 1928	July 15, 1928	July 15, 1927	June 15, 1928
		Cents	*Cents*	*Cents*		
Flour	Pound	5.5	5.7	5.6	+2	−2
Corn meal	do	5.2	5.3	5.3	+2	0
Rolled oats	do	9.0	8.9	8.9	−1	0
Corn flakes	8-oz. pkg	9.8	9.5	9.5	−3	0
Wheat cereal	28-oz. pkg	25.4	25.5	25.6	+1	+0.4
Macaroni	Pound	20.0	19.8	19.8	−1	0
Rice	do	10.7	9.9	10.0	−7	+1
Beans, navy	do	9.4	12.3	12.5	+33	+2
Potatoes	do	4.2	2.9	2.3	−45	−21
Onions	do	7.8	6.4	5.9	−24	−8
Cabbage	do	5.5	5.5	4.3	−22	−22
Beans, baked	No. 2 can	11.5	11.4	11.5	0	+1
Corn, canned	do	15.5	15.9	15.9	+3	0
Peas, canned	do	16.7	16.8	16.8	+1	0
Tomatoes, canned	do	12.0	11.6	11.6	−3	0
Sugar	Pound	7.4	7.3	7.3	−1	0
Tea	do	77.5	77.3	77.2	−0.4	−0.1
Coffee	do	47.6	49.2	49.2	+3	0
Prunes	do	15.7	13.6	13.8	−12	+1
Raisins	do	14.4	13.6	13.6	−6	0
Bananas	Dozen	33.4	32.5	32.1	−4	−1
Oranges	do	50.2	62.6	62.6	+25	0
Weighted food index					−0.4	+0.1

Table 2 shows for the United States average retail prices of specified food articles on July 15, 1913, and on July 15 of each year from 1922 to 1928, together with percentage changes in July of each of these specified years, compared with July, 1913. For example, the retail price per pound of round steak was 23.2 cents in July, 1913; 34.2 cents in July, 1922; 35.5 cents in July, 1923; 34.6 cents in July, 1924; 36.5 cents in July, 1925; 36.3 cents in July, 1926; 37.9 cents in July, 1927; and 43.9 cents in July, 1928.

As compared with July, 1913, these figures show increases of 47 per cent in July, 1922; 53 per cent in July, 1923; 49 per cent in July, 1924; 57 per cent in July, 1925; 56 per cent in July, 1926; 63 per cent in July, 1927; and 89 per cent in July, 1928.

The cost of the various articles of food combined showed an increase of 53.5 per cent in July, 1928, as compared with July, 1913.

TABLE 2.—AVERAGE RETAIL PRICES OF SPECIFIED FOOD ARTICLES AND PER CENT OF INCREASE JULY 15 OF CERTAIN SPECIFIED YEARS COMPARED WITH JULY 15, 1913

[Percentage changes of five-tenths of 1 per cent and over are given in whole numbers]

Article	Average retail price on July 15—								Per cent of increase July 15 of each specified year compared with July 15, 1913						
	1913	1922	1923	1924	1925	1926	1927	1928	1922	1923	1924	1925	1926	1927	1928
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*							
Sirloin steak..pound..	26.4	39.2	41.0	40.7	42.2	42.0	43.6	49.7	48	55	54	60	59	65	88
Round steak....do....	23.2	34.2	35.5	34.6	36.5	36.3	37.9	43.9	47	53	49	57	56	63	89
Rib roast.....do....	20.2	28.5	29.3	29.1	30.4	30.7	31.7	36.0	41	45	44	50	52	57	78
Chuck roast....do....	16.4	20.3	20.8	21.0	22.4	22.7	23.9	28.9	24	27	28	37	38	46	76
Plate beef.....do....	12.2	12.8	12.8	13.1	14.0	14.5	15.3	19.1	5	5	7	15	19	25	57
Pork chops.....do....	21.7	34.4	31.2	30.3	39.2	41.7	34.9	37.3	59	44	40	81	92	61	72
Bacon.....do....	28.0	40.6	39.1	36.4	48.7	52.3	46.6	43.9	45	40	30	74	87	66	57
Ham.....do....	28.1	52.3	46.0	44.7	54.4	60.9	54.6	53.4	86	64	59	94	117	94	90
Lamb, leg of....do....	19.7	37.4	38.5	38.4	39.3	40.3	40.3	41.1	90	95	95	99	105	105	109
Hens.....do....	21.7	35.7	34.8	35.3	36.6	39.2	35.6	36.7	65	60	63	69	81	64	69
Salmon, canned, red ..... pound..	.....	32.1	31.1	31.2	31.5	38.1	32.3	35.3	.....	.....	.....	.....	.....	.....	.....
Milk, fresh.....quart..	8.8	12.8	13.6	13.5	13.8	13.8	14.0	14.1	45	55	53	57	57	59	60
Milk, evaporated ..... 15–16 oz. can..	.....	10.9	12.2	11.2	11.4	11.4	11.5	11.1	.....	.....	.....	.....	.....	.....	.....
Butter.....pound..	34.8	45.7	49.1	49.5	53.2	50.1	51.4	54.3	31	41	42	53	44	48	56
Oleomargarine (all butter substitutes) ..... pound..	.....	27.0	28.2	29.2	29.9	30.2	28.0	27.2	.....	.....	.....	.....	.....	.....	.....
Cheese.....do....	21.9	31.5	36.2	34.4	36.6	35.6	36.9	38.3	44	65	57	67	63	68	75
Lard.....do....	15.9	17.2	17.1	17.1	23.5	22.9	18.8	18.6	8	8	8	48	44	18	17
Vegetable lard substitute.....pound..	.....	22.7	22.8	24.7	25.8	25.9	25.0	24.9	.....	.....	.....	.....	.....	.....	.....
Eggs, strictly fresh ..... dozen..	29.9	36.0	37.1	39.4	46.2	42.1	36.9	41.6	20	24	32	55	41	23	39
Bread.....pound..	5.6	8.8	8.8	8.7	9.4	9.4	9.3	9.2	57	57	55	68	68	66	64
Flour.....do....	3.3	5.2	4.7	4.8	6.1	6.0	5.5	5.6	58	42	45	85	82	67	70
Corn meal.....do....	3.0	3.9	4.1	4.5	5.4	5.1	5.2	5.3	30	37	50	80	70	73	77
Rolled oats.....do....	.....	8.7	8.8	8.8	9.2	9.1	9.0	8.9	.....	.....	.....	.....	.....	.....	.....
Corn flakes ..... 8-oz. package..	.....	9.8	9.7	9.6	11.1	10.9	9.8	9.5	.....	.....	.....	.....	.....	.....	.....
Wheat cereal ..... 28-oz. package..	.....	25.8	24.4	24.3	24.6	25.4	25.4	25.6	.....	.....	.....	.....	.....	.....	.....
Macaroni.....pound..	.....	20.0	19.8	19.6	20.5	20.2	20.0	19.8	.....	.....	.....	.....	.....	.....	.....
Rice.....do....	8.7	9.6	9.4	10.0	11.2	11.7	10.7	10.0	10	8	15	29	34	23	15
Beans, navy....do....	.....	11.1	11.3	9.7	10.3	9.2	9.4	12.5	.....	.....	.....	.....	.....	.....	.....
Potatoes.....do....	1.9	3.6	4.2	3.3	4.4	4.1	4.2	2.3	89	121	74	132	116	121	21
Onions.....do....	.....	7.0	7.4	6.9	9.5	6.8	7.8	5.9	.....	.....	.....	.....	.....	.....	.....
Cabbage.....do....	.....	4.6	5.4	5.0	6.5	5.1	5.5	4.3	.....	.....	.....	.....	.....	.....	.....
Beans, baked ..... No. 2 can..	.....	13.3	12.9	12.6	12.4	11.9	11.5	11.5	.....	.....	.....	.....	.....	.....	.....
Corn, canned...do....	.....	15.4	15.4	15.8	18.3	16.4	15.5	15.9	.....	.....	.....	.....	.....	.....	.....
Peas, canned....do....	.....	17.8	17.6	18.1	18.4	17.4	16.7	16.8	.....	.....	.....	.....	.....	.....	.....
Tomatoes, canned ..... No. 2 can..	.....	13.8	13.0	13.2	13.7	11.8	12.0	11.6	.....	.....	.....	.....	.....	.....	.....
Sugar, granulated ..... pound..	5.5	7.6	10.5	8.4	7.1	6.9	7.4	7.3	38	91	53	29	25	35	33
Tea.....do....	54.4	68.0	69.4	70.8	75.8	77.0	77.5	77.2	25	28	30	39	42	42	42
Coffee.....do....	29.8	36.2	37.7	42.4	50.8	51.1	47.6	49.2	21	27	42	70	71	60	65
Prunes.....do....	.....	20.8	19.2	17.4	17.3	17.2	15.7	13.8	.....	.....	.....	.....	.....	.....	.....
Raisins.....do....	.....	24.0	17.5	15.4	14.5	14.8	14.4	13.6	.....	.....	.....	.....	.....	.....	.....
Bananas.....dozen..	.....	35.8	38.8	35.9	36.2	35.2	33.4	32.1	.....	.....	.....	.....	.....	.....	.....
Oranges.....do....	.....	63.2	53.1	45.4	61.2	49.6	50.2	62.6	.....	.....	.....	.....	.....	.....	.....
All articles combined [1]	.....	.....	.....	.....	.....	.....	.....	.....	42.7	47.8	43.9	60.5	57.7	54.0	53.5

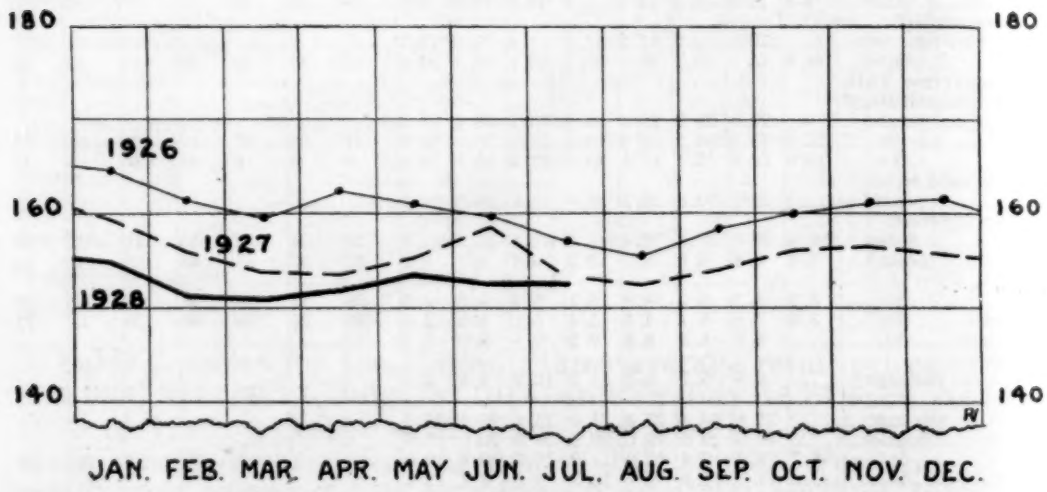
[1] Beginning with January, 1921, index numbers showing the trend in the retail cost of food have been composed of the articles shown in Tables 1 and 2, weighted according to the consumption of the average family. From January, 1913, to December, 1920, the index numbers included the following articles: Sirloin steak, round steak, rib roast, chuck roast, plate beef, pork chops, bacon, ham, lard, hens, flour, corn meal, eggs, butter, milk, bread, potatoes, sugar, cheese, rice, coffee, and tea.

Index Numbers of Retail Prices of Food in the United States

IN TABLE 3 index numbers are given which show the changes in the retail prices of specified food articles, by years, for 1913 and 1920 to 1927,[2] and by months for 1927, and for January through July, 1928. These index numbers, or relative prices, are based on the year 1913 as 100 and are computed by dividing the average price of each commodity for each month and each year by the average price of that commodity for 1913. These figures must be used with caution. For example, the relative price of sirloin steak for the year 1926 was 162.6, which means that the average money price for the year 1926 was 62.6 per cent higher than the average money price for the year 1913. As compared with the relative price, 159.8 in 1925, the figures for 1926 show an increase of nearly three points, but an increase of 1.75 per cent in the year.

TREND OF RETAIL PRICES OF FOODS

[1913=100]



In the last column of Table 3 are given index numbers showing changes in the retail cost of all articles of food combined. Since January, 1921, these index numbers have been computed from the average prices of the articles of food shown in Tables 1 and 2, weighted according to the average family consumption in 1918. (See March, 1921, issue, p. 25.) Although previous to January, 1921, the number of food articles has varied, these index numbers have been so computed as to be strictly comparable for the entire period. The index numbers based on the average for the year 1913 as 100 are 152.6 for June, 1928, and 152.8 for July, 1928.

The curve shown in the chart on this page pictures more readily to the eye the changes in the cost of the food budget than do the index numbers given in the table.

[2] For index numbers of each month, January, 1913, to December, 1926, see Bulletin No. 396, pp. 44–61; Bulletin No. 418, pp. 38–51; and Bulletin No. 445, pp. 36–49.

TABLE 3.—INDEX NUMBERS OF RETAIL PRICES OF PRINCIPAL ARTICLES OF FOOD, BY YEARS, 1913, 1920 TO 1927, AND BY MONTHS FOR 1927 AND JANUARY THROUGH JULY, 1928

[Average for year 1913=100.0]

Year and month	Sirloin steak	Round steak	Rib roast	Chuck roast	Plate beef	Pork chops	Bacon	Hams	Hens	Milk	Butter	Cheese
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1920	172.1	177.1	167.7	163.8	151.2	201.4	193.7	206.3	209.9	187.6	183.0	188.2
1921	152.8	154.3	147.0	132.5	118.2	166.2	158.2	181.4	184.4	164.0	135.0	153.9
1922	147.2	144.8	139.4	123.1	105.8	157.1	147.4	181.4	169.0	147.2	125.1	148.9
1923	153.9	150.2	143.4	126.3	106.6	144.8	144.8	169.1	164.3	155.1	144.7	167.0
1924	155.9	151.6	145.5	130.0	109.1	146.7	139.6	168.4	165.7	155.1	135.0	159.7
1925	159.8	155.6	149.5	135.0	114.1	174.3	173.0	195.5	171.8	157.3	143.1	166.1
1926	162.6	159.6	153.0	140.6	120.7	188.1	186.3	213.4	182.2	157.3	138.6	165.6
1927	167.7	166.4	158.1	148.1	127.3	175.2	174.8	204.5	173.2	158.4	145.2	170.1
1927: January	160.6	158.3	153.0	141.9	124.0	174.3	181.1	211.2	180.8	158.4	152.5	170.1
February	161.0	158.7	153.5	141.9	123.1	171.0	179.6	210.8	180.8	158.4	153.5	170.1
March	161.8	159.6	153.5	142.5	123.1	174.3	179.3	210.0	181.7	158.4	154.6	168.8
April	164.6	163.2	156.1	145.6	125.6	175.7	178.2	210.8	182.6	157.3	152.5	167.9
May	166.5	165.5	157.6	146.9	125.6	173.3	176.3	209.3	180.3	156.2	139.4	167.4
June	166.9	165.9	157.1	146.9	125.6	165.2	174.4	206.3	170.4	156.2	135.2	167.4
July	171.7	170.0	160.1	149.4	126.4	166.2	172.6	203.0	167.1	157.3	134.2	167.0
August	172.0	170.9	160.1	149.4	126.4	179.5	172.2	201.9	166.2	158.4	134.2	167.4
September	172.4	170.9	160.6	150.0	128.1	193.8	172.2	200.0	166.2	158.4	139.4	170.6
October	172.0	170.0	161.1	151.9	130.6	197.6	172.6	199.3	167.6	159.6	145.4	173.3
November	171.3	169.5	161.1	153.1	133.9	172.9	171.5	197.0	167.1	159.6	147.3	174.7
December	172.8	171.3	163.6	156.9	138.0	156.2	167.8	192.9	167.6	160.7	152.5	176.5
1928: January	174.8	173.1	165.2	158.8	142.1	149.0	165.2	192.2	172.8	160.7	150.9	177.4
February	176.4	174.4	167.2	160.6	144.6	140.5	161.9	190.3	174.6	160.7	147.0	177.4
March	176.8	175.3	167.2	161.3	146.3	136.2	159.3	187.7	174.6	159.6	149.6	174.2
April	178.3	177.6	168.7	163.1	147.9	149.0	158.9	188.1	177.0	158.4	143.9	172.9
May	181.5	181.2	172.2	166.3	150.4	168.6	159.6	190.3	177.0	158.4	142.6	172.4
June	186.6	186.5	175.3	172.5	152.9	165.7	160.0	192.2	174.2	157.3	140.7	172.4
July	195.7	196.9	181.8	180.6	157.9	177.6	162.6	198.5	172.3	158.4	141.8	173.3

Year and month	Lard	Eggs	Bread	Flour	Corn meal	Rice	Potatoes	Sugar	Tea	Coffee	All articles[1]
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1920	186.7	197.4	205.4	245.5	216.7	200.0	370.6	352.7	134.7	157.7	203.4
1921	113.9	147.5	176.8	175.8	150.0	109.2	182.4	145.5	128.1	121.8	153.3
1922	107.6	128.7	155.4	154.5	130.0	109.2	164.7	132.7	125.2	121.1	141.6
1923	112.0	134.8	155.4	142.4	136.7	109.2	170.6	183.6	127.8	126.5	146.2
1924	120.3	138.6	157.1	148.5	156.7	116.1	158.8	167.3	131.4	145.3	145.9
1925	147.5	151.0	167.9	184.8	180.0	127.6	211.8	130.9	138.8	172.8	157.4
1926	138.6	140.6	167.9	181.8	170.0	133.3	288.2	125.5	141.0	171.1	160.6
1927	122.2	131.0	166.1	166.7	173.3	123.0	223.5	132.7	142.5	162.1	155.4
1927: January	126.6	162.0	167.9	169.7	170.0	126.4	235.3	136.4	142.5	168.5	159.3
February	124.1	128.1	167.9	169.7	170.0	124.1	223.5	136.4	142.3	167.4	156.0
March	122.8	102.6	167.9	166.7	170.0	124.1	217.6	134.5	142.6	165.4	153.8
April	120.9	98.3	167.9	166.7	170.0	123.0	217.6	132.7	142.6	163.8	153.6
May	120.3	97.4	167.9	166.7	170.0	121.8	264.7	132.7	142.3	161.7	155.4
June	119.0	97.1	166.1	166.7	173.3	123.0	352.9	132.7	142.1	160.7	158.5
July	119.0	107.0	166.1	166.7	173.3	123.0	247.1	134.5	142.5	159.7	153.4
August	119.6	121.7	166.1	169.7	173.3	123.0	200.0	132.7	142.6	159.1	152.4
September	121.5	141.2	166.1	166.7	173.3	121.8	188.2	130.9	141.9	158.7	154.0
October	124.1	164.1	166.1	166.7	173.3	120.7	176.5	130.9	142.5	159.1	156.1
November	123.4	178.8	166.1	163.6	173.3	119.5	176.5	130.9	142.5	160.4	156.5
December	121.5	172.8	164.3	163.6	173.3	118.4	176.5	129.1	142.1	161.4	155.9
1928: January	119.6	162.0	164.3	160.6	173.3	117.2	176.5	129.1	142.3	162.8	155.1
February	115.8	124.9	164.3	160.6	173.3	117.2	176.5	129.1	142.1	163.1	151.6
March	112.7	107.2	162.5	160.6	173.3	116.1	200.0	129.1	142.3	163.8	151.4
April	112.7	103.8	162.5	163.6	176.7	114.9	205.9	129.1	141.9	164.1	152.1
May	114.6	108.7	162.5	169.7	176.7	114.9	194.1	130.9	141.9	164.4	153.8
June	115.2	112.5	164.3	172.7	176.7	113.8	170.6	132.7	142.1	165.1	152.6
July	117.7	120.6	164.3	169.7	176.7	114.9	135.3	132.7	141.9	165.1	152.8

[1] 22 articles in 1913–1920; 43 articles in 1921–1928.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928

[Exact comparisons of prices in different cities can not be made for some articles, particularly meats and vegetables, owing to differences in trade practices]

Article	Atlanta, Ga.			Baltimore, Md.			Birmingham, Ala.			Boston, Mass.			Bridgeport, Conn.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Sirloin steak...pound..	42.4	44.8	46.0	41.5	46.4	48.7	42.4	46.6	49.2	[1]70.2	[1]72.8	[1]73.1	53.5	54.5	58.8
Round steak....do....	37.8	41.5	42.9	37.5	42.4	44.7	36.7	40.0	41.3	55.3	56.1	62.4	46.0	48.1	51.8
Rib roast.....do....	33.0	36.8	36.5	31.5	35.5	35.5	29.9	32.3	34.5	39.7	42.0	43.2	40.4	40.5	43.3
Chuck roast.....do....	24.6	28.9	30.0	23.5	28.0	29.5	23.9	27.0	28.7	30.8	31.8	33.4	29.9	32.3	35.2
Plate beef.....do....	15.2	19.1	19.5	15.5	19.0	19.0	15.5	17.4	18.8	20.3	21.8	21.9	12.9	13.6	16.2
Pork chops.....do....	33.4	34.9	35.8	33.8	33.1	37.5	33.7	33.2	33.5	35.7	36.2	39.7	38.2	36.8	39.5
Bacon, sliced....do....	44.9	40.6	40.8	43.0	38.7	38.9	47.1	42.4	41.8	44.7	40.9	41.3	50.8	49.7	50.5
Ham, sliced.....do....	55.7	50.8	52.5	57.7	52.4	54.4	55.0	50.5	51.6	59.6	55.8	58.9	58.2	55.5	57.9
Lamb, leg of....do....	40.9	42.9	41.5	39.9	42.5	40.2	42.1	46.6	45.4	42.1	43.6	42.9	43.6	44.1	43.7
Hens.....do....	33.7	34.7	34.4	37.3	38.7	39.7	33.5	31.5	30.7	38.3	40.3	39.8	38.1	40.7	39.9
Salmon, canned, red ....pound..	33.6	35.0	35.6	28.9	33.8	33.8	33.9	37.0	37.0	31.6	34.1	33.5	31.5	33.5	34.1
Milk, fresh.....quart..	18.0	16.5	16.5	14.0	14.0	14.0	16.3	18.7	18.7	14.3	14.8	15.3	16.0	16.0	16.0
Milk, evaporated ....15–16 oz. can..	13.4	13.2	13.2	11.3	11.1	11.0	12.6	11.7	11.9	12.0	11.6	11.6	11.5	11.5	11.5
Butter.....pound..	54.1	56.4	56.5	55.5	58.8	58.8	56.8	57.5	56.4	56.3	56.5	56.3	52.8	56.0	55.6
Oleomargarine (all butter substitutes) ....pound..	26.8	25.7	26.0	28.0	27.6	27.6	32.3	31.5	31.4	28.3	28.7	28.3	27.4	26.3	26.3
Cheese.....do....	36.2	35.6	35.5	35.1	36.0	36.3	36.2	36.5	36.5	38.6	40.6	40.3	40.5	43.0	43.4
Lard.....do....	18.8	18.0	17.6	17.1	16.4	16.5	19.6	18.3	18.5	18.9	18.2	18.3	18.1	17.6	17.8
Vegetable lard substitute.....pound..	21.9	21.9	21.8	22.4	23.3	23.3	22.2	20.3	20.0	25.1	25.0	25.1	25.3	25.5	25.5
Eggs, strictly fresh ....dozen..	36.7	36.8	40.0	32.6	37.3	39.2	35.5	37.5	40.2	54.0	52.8	58.9	49.9	51.9	55.1
Bread.....pound..	10.8	10.8	10.8	9.9	9.6	9.6	10.4	9.9	9.9	8.5	8.6	8.6	8.8	8.8	8.8
Flour.....do....	6.5	6.8	6.8	5.3	5.2	5.2	6.6	6.9	6.9	6.2	6.0	6.0	5.8	5.6	5.6
Corn meal.....do....	3.9	4.2	4.3	4.0	4.1	4.0	4.2	4.2	4.2	6.6	6.8	6.8	7.7	7.5	7.5
Rolled oats.....do....	9.3	9.5	9.1	8.2	8.1	8.0	9.9	9.7	9.6	9.2	8.9	8.9	8.5	8.7	8.7
Corn flakes .....8-oz. package..	9.8	9.7	9.7	9.1	8.6	8.6	11.1	10.0	10.0	10.1	9.5	9.3	9.7	9.5	9.2
Wheat cereal .....28-oz. package..	26.2	26.6	26.6	24.1	24.2	24.0	27.6	27.3	27.3	25.2	25.0	25.0	24.8	24.6	24.4
Macaroni.....pound..	21.7	21.3	21.3	19.0	19.0	18.9	19.1	18.9	18.3	22.5	21.7	21.6	22.7	22.3	22.3
Rice.....do....	10.5	8.9	9.1	9.7	9.0	8.8	11.0	9.4	9.8	12.0	11.0	10.9	11.5	10.5	10.2
Beans, navy....do....	10.4	12.8	13.0	8.4	11.9	12.0	10.1	12.4	12.6	10.1	11.8	12.2	9.6	11.7	11.8
Potatoes.....do....	5.4	4.2	3.2	3.4	2.8	1.8	5.5	3.7	3.4	3.7	2.4	2.1	3.5	2.3	2.0
Onions.....do....	8.7	8.0	7.5	6.9	5.9	5.9	8.9	7.7	7.2	7.2	6.4	5.8	8.6	6.2	6.1
Cabbage.....do....	6.3	5.7	4.1	4.2	4.4	3.5	6.2	5.4	4.6	5.9	6.7	6.0	6.1	6.9	5.4
Beans, baked..No. 2 can..	11.1	10.5	10.7	10.3	10.8	10.8	11.5	11.3	11.5	13.3	12.5	12.6	11.5	11.7	11.6
Corn, canned...do....	18.2	17.6	17.5	14.3	15.0	15.5	15.9	17.3	17.3	18.0	17.5	17.5	18.1	19.2	19.2
Peas, canned....do....	19.7	19.0	19.2	14.5	14.9	14.8	20.4	20.0	20.0	20.4	19.3	19.7	21.0	21.5	21.5
Tomatoes, canned .....No. 2 can..	11.5	10.2	10.2	10.7	10.2	10.1	11.3	10.0	10.0	12.1	11.8	11.9	13.8	13.1	13.5
Sugar.....pound..	7.8	7.7	7.7	6.7	6.5	6.5	7.8	7.5	7.6	7.4	7.1	7.2	7.1	6.9	7.0
Tea.....do....	103.8	106.3	105.9	73.4	72.7	72.3	95.6	100.3	99.7	74.4	72.4	71.9	60.9	61.0	61.0
Coffee.....do....	49.6	49.0	49.0	43.1	44.9	45.1	51.8	50.3	50.6	52.2	54.0	54.3	46.0	47.5	47.5
Prunes.....do....	17.8	14.7	14.4	13.3	11.5	11.5	19.1	15.8	16.2	15.4	12.5	12.6	16.0	15.1	15.1
Raisins.....do....	16.3	15.0	15.0	13.0	12.8	12.7	14.9	14.6	14.5	13.3	12.4	12.2	14.2	13.7	13.5
Bananas.....dozen..	29.5	29.4	27.8	24.5	23.6	23.7	38.1	38.0	38.9	42.2	44.0	44.0	34.5	33.8	33.1
Oranges.....do....	49.8	62.8	62.7	50.8	62.8	60.5	49.9	61.7	62.7	54.7	71.5	68.0	59.7	70.9	71.8

[1] The steak for which prices are here quoted is called "sirloin" in this city, but in most of the other cities included in this report it would be known as "porterhouse" steak.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	Buffalo, N. Y.			Butte, Mont.			Charleston, S. C.			Chicago, Ill.			Cincinnati, Ohio		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Sirloin steak...pound	43.5	46.0	48.8	35.0	35.6	35.2	33.0	39.3	38.3	46.0	49.7	53.8	39.1	43.9	46.6
Round steak...do	37.0	39.3	41.9	31.4	34.5	34.1	30.7	37.0	37.0	37.3	40.7	45.1	35.7	40.6	42.8
Rib roast...do	31.5	33.9	35.2	28.8	31.4	31.0	27.0	32.3	31.7	35.0	38.5	40.1	31.6	34.9	36.4
Chuck roast...do	24.3	27.4	29.3	21.4	24.1	24.1	20.2	26.2	25.2	25.5	30.3	32.5	23.1	26.5	27.7
Plate beef...do	14.0	17.7	18.1	14.4	15.9	16.0	14.6	18.9	17.7	15.2	18.3	19.2	15.6	20.3	20.1
Pork chops...do	36.8	36.6	39.3	35.2	34.7	35.5	34.3	34.6	34.3	32.4	31.9	37.3	32.7	34.1	35.1
Bacon, sliced...do	41.8	38.7	40.0	55.0	50.0	49.6	40.4	36.5	36.7	49.9	47.3	47.9	40.3	38.2	39.1
Ham, sliced...do	53.1	50.1	51.4	59.2	55.0	54.6	50.8	45.3	46.4	54.0	52.0	53.6	53.3	50.4	52.6
Lamb, leg of...do	36.0	40.4	37.3	39.5	38.2	39.5	40.6	44.3	42.9	39.3	41.4	41.4	37.3	43.6	41.7
Hens...do	36.7	39.1	38.1	34.7	35.1	35.0	36.7	37.5	37 5	35.6	38.0	38.4	37.9	39.1	38.2
Salmon, canned, red ...pound	30.5	34.8	34.6	31.1	32.4	32.7	29.0	34.8	34.8	34.9	35.9	37.2	30.8	35.6	35.6
Milk, fresh...quart	13.0	13.0	13.0	14.0	14.0	14.0	19.0	19.0	18.7	14.0	14.0	14.0	13.3	14.0	14.0
Milk, evaporated ...15–16 oz. can	11.3	10.7	10.7	11.2	10.6	10.5	11.8	11.3	11.4	11.2	10.9	10.9	11.3	10.8	10.9
Butter...pound	51.4	53.6	53.9	49.1	51.0	51.3	50.0	52.6	51.8	50.1	52.1	52.8	49.8	55.3	55.5
Oleomargarine (all butter substitutes) ...pound	28.1	27.6	27.7	----	----	----	30.6	28.8	28.7	26.9	26.5	26.7	27.9	27.7	27.7
Cheese...do	38.8	39.3	39.2	36.5	37.3	37.7	33.0	34.9	35.6	41.5	43.2	43.2	36.2	39.1	39.4
Lard...do	17.6	16.9	17.0	23.8	21.1	21.3	20.6	18.8	19.0	19.0	18.5	18.6	17.0	16.9	16.8
Vegetable lard substitute...pound	25.9	25.5	25.5	29.7	30.3	30.3	21.7	21.5	21.6	26.6	26.2	26.1	25.7	25.7	26.0
Eggs, strictly fresh ...dozen	36.3	40.4	42.3	42.8	40.2	45.5	35.7	37.5	40.9	37.8	42.8	44.0	34.0	36.6	38.3
Bread...pound	8.7	8.7	8.7	9.8	9.8	9.8	10.9	10.9	11.0	9.9	9.6	9.6	8.9	8.6	8.7
Flour...do	5.1	5.2	5.1	5.5	5.8	5.8	6.9	7.0	7.0	5.3	5.3	5.1	5.8	5.9	5.9
Corn meal...do	5.1	5.1	5.1	5.8	6.3	6.3	3.9	3.9	4.0	6.7	6.9	7.0	4.2	4.6	4.7
Rolled oats...do	8.7	8.8	8.8	7.5	8.1	8.1	9.5	9.5	9.5	8.4	8.5	8.5	8.7	8.9	8.9
Corn flakes ...8-oz. package	9.5	9.0	9.0	10.9	10.3	10.3	10.2	9.8	9.8	9.6	9.4	9.3	9.4	9.3	9.3
Wheat cereal ...28-oz. package	24.7	24.9	24.9	28.5	28.7	28.7	25.8	25.6	25.6	25.0	25.1	25.1	24.8	24.8	24.9
Macaroni...pound	21.1	21.2	21.3	19.5	19.4	19.7	18.7	18.5	18.4	19.1	18.9	19.0	18.4	18.4	18.1
Rice...do	10.3	9.9	9.8	11.1	11.1	11.1	7.3	6.7	6.7	11.1	10.5	10.6	9.8	9.4	9.7
Beans, navy...do	8.8	12.3	12.3	10.1	10.7	10.9	9.7	11.8	13.2	9.7	12.5	12.6	8.5	13.0	13.2
Potatoes...do	3.4	2.9	1.9	4.6	1.7	2.6	4.3	2.3	1.7	4.3	3.2	2.6	4.5	3.1	2.7
Onions...do	8.7	7.1	6.8	8.5	6.3	6.7	7.8	6.7	6.5	8.0	6.0	6.1	6.6	6.6	5.9
Cabbage...do	5.5	5.9	4.0	8.0	8.0	7.5	6.9	3.4	4.2	5.8	5.7	4.4	5.5	5.1	4.0
Beans, baked ...No. 2 can	9.9	10.1	10.2	13.9	13.5	13.6	9.8	9.9	10.2	12.9	12.8	12.9	10.5	10.4	10.6
Corn, canned...do	15.5	16.0	16.0	15.0	14.5	14.8	14.3	14.8	14.8	15.8	16.1	16.1	14.6	15.3	15.5
Peas, canned...do	16.0	15.8	15.7	13.9	14.3	14.1	16.3	16.4	16.4	16.8	17.1	17.1	16.8	17.1	17.5
Tomatoes, canned ...No. 2 can	13.1	12.6	12.5	12.9	12.8	12.8	10.2	9.8	9.8	13.8	13.7	13.6	11.8	11.6	11.8
Sugar...pound	7.1	6.8	6.9	8.7	8.5	8.5	7.0	7.0	6.7	7.1	7.0	7.0	7.6	7.4	7.4
Tea...do	66.6	69.0	68.8	82.3	82.4	83.1	82.4	80.7	82.8	74.2	69.4	69.2	75.5	79.8	79.8
Coffee...do	45.9	46.9	46.8	54.5	55.2	55.2	43.9	44.8	45.2	48.0	47.2	47.8	42.9	44.9	44.9
Prunes...do	14.2	13.7	13.9	15.3	14.8	14.8	14.3	10.6	11.0	17.6	15.0	15.1	15.8	13.2	13.3
Raisins...do	13.6	12.8	12.7	15.0	14.6	14.4	14.6	12.5	12.4	15.1	14.3	14.3	14.9	14.2	14.3
Bananas...dozen	40.8	39.3	37.8	[1] 13.5	[1] 10.2	[1] 12.0	26.3	21.5	21.5	38.8	39.0	39.0	36.1	36.9	35.6
Oranges...do	55.7	64.1	61.8	45.0	64.4	61.6	40.0	53.0	60.0	55.2	61.7	64.7	45.4	61.6	60.0

[1] Per pound.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	Cleveland, Ohio			Columbus, Ohio			Dallas, Tex.			Denver, Colo.			Detroit, Mich.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Sirloin steak..pound..	42.7	47.5	52.1	41.4	46.1	47.5	38.1	43.2	43.2	36.6	40.7	43.0	43.9	49.7	51.9
Round steak....do....	36.8	41.4	45.6	36.6	40.8	42.7	34.6	39.6	40.6	33.7	37.7	39.8	36.8	41.2	43.2
Rib roast.....do....	30.0	33.1	35.8	31.8	35.3	36.4	29.0	33.9	33.6	26.0	31.2	32.5	32.7	36.3	37.6
Chuck roast.....do....	24.8	30.4	31.9	25.0	29.7	30.5	23.5	28.6	27.5	21.3	25.3	27.0	24.5	29.2	30.4
Plate beef.....do....	14.1	19.1	19.9	16.6	20.3	20.8	18.3	21.4	21.8	12.0	15.9	16.1	14.7	18.8	19.5
Pork chops.....do....	35.4	34.8	39.0	33.0	32.3	34.4	35.8	35.1	36.1	31.3	32.3	34.2	35.7	36.9	39.5
Bacon, sliced....do....	46.2	42.7	43.7	48.3	45.4	45.3	45.3	44.4	43.4	46.2	42.4	42.0	48.2	44.2	46.1
Ham, sliced.....do....	54.3	52.9	56.4	54.6	48.9	50.3	57.4	55.0	56.1	53.4	52.9	53.8	58.3	53.9	57.6
Lamb, leg of....do....	39.9	41.1	40.8	47.5	47.6	46.7	46.4	44.8	45.0	37.8	38.9	38.7	41.6	45.7	44.0
Hens.....do....	36.5	37.6	37.4	36.0	38.5	38.8	31.7	32.6	32.7	30.3	30.4	30.3	37.2	38.7	38.3
Salmon, canned, red ..pound..	33.1	35.7	35.4	35.4	37.8	38.0	33.9	38.1	38.1	32.6	38.0	37.7	32.3	35.3	35.3
Milk, fresh.....quart..	14.0	13.7	13.3	12.0	11.0	11.0	13.0	12.3	12.3	12.0	12.0	12.0	14.0	14.0	14.0
Milk evaporated ..15–16 oz. can..	11.4	10.9	11.2	11.6	11.0	11.1	13.3	13.1	13.3	10.7	10.2	10.2	11.3	10.6	10.8
Butter.....pound..	53.5	56.3	57.2	50.4	53.0	53.2	50.3	55.9	55.9	45.1	50.1	48.5	52.0	53.3	54.3
Oleomargarine (all butter substitutes) ..pound..	29.2	28.5	28.5	27.5	27.0	27.1	30.7	28.3	28.3	25.0	24.5	24.4	27.4	24.8	24.9
Cheese.....do....	38.4	39.8	40.1	35.7	36.4	37.1	37.1	38.0	38.5	36.8	39.1	40.3	38.5	38.2	39.7
Lard.....do....	20.2	19.4	19.5	16.2	15.3	15.6	22.4	21.2	21.1	19.2	18.3	18.7	18.9	18.0	18.3
Vegetable lard substitute.....pound..	26.6	26.8	26.8	26.2	27.3	27.1	23.0	24.0	23.9	22.3	22.0	21.9	27.1	26.4	26.4
Eggs, strictly fresh ..dozen..	38.4	43.3	45.1	30.6	34.1	34.9	30.6	34.9	36.8	33.1	33.7	36.5	36.0	39.8	43.3
Bread.....pound..	7.7	7.8	7.8	7.8	7.6	7.6	9.5	9.3	9.3	7.9	8.0	8.1	8.5	8.1	8.2
Flour.....do..	5.6	5.8	5.9	5.4	5.3	5.4	5.5	5.6	5.5	4.4	4.5	4.5	5.4	5.4	5.3
Corn meal.....do....	5.6	5.6	6.0	3.8	4.2	4.2	4.5	4.5	4.5	4.5	4.7	4.5	6.5	6.1	6.1
Rolled oats.....do....	9.4	9.3	9.4	9.4	9.0	9.1	10.9	10.1	10.0	7.6	7.6	7.6	9.6	9.2	9.2
Corn flakes ..8-oz. package..	9.9	9.9	9.9	9.9	9.9	9.6	10.5	10.2	10.2	9.6	9.5	9.6	9.9	9.2	9.1
Wheat cereal ..28-oz. package..	25.5	26.0	25.8	26.4	26.7	26.9	27.9	27.8	27.8	24.6	24.6	24.4	25.5	25.3	25.4
Macaroni.....pound..	21.8	21.1	21.1	21.0	20.4	20.8	21.8	21.6	21.8	19.9	19.3	19.4	22.3	21.7	21.7
Rice.....do....	11.1	10.1	10.2	12.1	11.9	11.6	11.4	11.3	11.3	10.1	9.0	9.0	11.9	11.4	11.4
Beans, navy....do....	8.6	11.8	12.3	8.2	13.4	14.1	11.1	13.0	13.4	10.5	12.1	12.1	8.4	13.0	13.2
Potatoes.....do....	4.0	3.3	2.2	4.1	3.0	2.1	5.9	4.5	4.0	4.6	2.4	2.4	3.7	2.2	1.8
Onions.....do....	8.3	6.9	6.3	8.8	7.2	6.7	8.4	6.2	5.5	7.7	6.3	6.0	7.6	5.7	5.2
Cabbage.....do....	5.6	5.9	4.8	5.5	6.0	4.5	7.6	5.8	5.4	3.5	5.3	3.9	4.7	5.0	4.1
Beans, baked ..No. 2 can..	13.1	12.9	12.6	12.5	11.7	11.7	12.9	12.0	11.9	11.1	11.6	11.9	11.7	11.5	11.5
Corn, canned....do....	16.9	17.1	17.2	13.8	14.8	14.8	18.1	18.4	18.4	13.5	14.3	14.3	16.2	15.8	15.7
Peas, canned....do....	18.2	17.6	17.6	14.7	14.8	14.8	21.7	21.8	21.5	14.7	15.3	15.5	17.0	16.6	16.3
Tomatoes, canned ..No. 2 can..	14.1	13.7	13.9	13.3	12.3	12.3	13.1	12.0	11.8	11.4	12.0	11.9	12.6	12.1	12.1
Sugar.....pound..	7.5	7.6	7.7	7.8	7.7	7.7	8.2	7.8	7.9	7.9	7.7	7.5	7.5	7.4	7.5
Tea.....do....	81.6	81.0	81.0	91.1	86.2	86.1	105.9	105.5	104.3	68.8	70.0	70.0	75.5	75.2	75.2
Coffee.....do....	50.4	52.1	52.5	48.7	48.8	49.0	57.7	58.1	58.2	49.2	49.7	49.7	48.5	48.4	48.9
Prunes.....do....	15.5	14.0	13.8	17.1	15.8	15.3	21.8	18.1	17.9	16.3	14.6	14.9	18.2	14.0	14.0
Raisins.....do....	14.7	13.6	13.6	14.7	13.7	13.9	16.5	15.3	15.4	14.2	13.5	13.3	15.3	13.4	13.6
Bananas.....dozen..	[1] 10.3	[1] 9.7	[1] 9.4	38.6	34.0	34.0	36.3	35.0	35.0	[1] 10.8	[1] 9.4	[1] 9.3	34.4	29.0	33.0
Oranges.....do....	54.7	66.7	66.6	50.0	66.2	62.6	48.7	61.6	61.2	44.0	58.0	58.2	55.8	60.8	64.8

[1] Per pound.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	Fall River, Mass.			Houston, Tex.			Indianapolis, Ind.			Jacksonville, Fla.			Kansas City, Mo.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Sirloin steak..pound..	[1]66.9	[1]69.5	[1]74.4	35.0	37.8	38.3	40.6	46.6	49.4	36.3	37.8	38.8	38.7	45.0	47.8
Round steak....do....	50.2	52.8	57.2	33.6	37.0	37.5	39.1	44.7	47.8	32.1	33.3	34.5	34.4	40.9	42.7
Rib roast.....do....	34.1	36.2	40.2	27.5	30.5	30.7	30.3	33.8	35.0	27.3	29.3	29.3	27.5	31.3	33.7
Chuck roast....do....	25.2	28.0	31.6	22.0	24.6	24.6	25.0	29.3	30.5	20.3	22.8	22.9	20.0	25.5	26.6
Plate beef.....do....	13.9	17.3	19.2	18.0	20.0	20.0	15.8	19.3	20.1	13.0	14.2	14.7	13.9	18.5	18.9
Pork chops.....do....	35.4	35.5	38.1	33.2	32.2	33.5	32.9	35.3	37.8	32.1	30.5	31.5	32.6	32.4	34.9
Bacon, sliced....do....	43.9	42.1	42.2	45.1	39.9	41.0	43.0	41.5	43.2	43.6	37.0	38.7	44.3	42.9	43.0
Ham, sliced.....do....	54.4	50.4	51.5	52.5	46.7	47.3	54.6	52.9	54.6	50.9	46.5	48.0	52.2	49.7	52.5
Lamb, leg of....do....	43.8	45.1	43.6	35.7	32.5	34.0	41.3	46.0	42.0	39.9	40.3	40.0	36.7	37.4	36.8
Hens.....do....	41.9	45.3	44.1	31.1	31.0	30.2	36.3	39.4	40.2	33.8	33.6	32.1	29.8	32.9	32.5
Salmon, canned, red ..pound..	34.7	36.3	36.2	30.2	34.0	34.4	33.5	34.9	32.8	32.6	34.3	34.1	34.9	37.0	37.0
Milk, fresh.....quart..	14.0	13.7	13.7	15.2	15.6	15.0	12.0	12.0	12.0	20.3	20.3	20.3	13.0	13.0	13.0
Milk, evaporated .....15–16 oz. can..	12.7	12.4	12.4	11.6	10.6	10.6	10.7	10.6	10.4	11.9	11.0	11.2	11.7	11.1	11.1
Butter.....pound..	50.9	55.3	55.6	49.5	52.8	51.6	50.4	54.2	53.9	52.5	54.7	54.8	49.5	51.9	52.3
Oleomargarine (all butter substitutes) ..pound..	30.5	26.8	25.9	27.8	25.4	25.2	29.1	29.3	29.2	30.9	31.0	30.1	25.5	25.2	25.1
Cheese.....do....	39.3	41.4	41.5	32.6	33.5	34.0	37.2	40.5	40.5	34.5	34.5	35.8	35.7	36.6	37.6
Lard.....do....	18.1	17.8	17.8	19.6	19.1	19.4	16.8	15.5	16.3	21.3	18.9	18.9	18.8	18.3	18.9
Vegetable lard substitute.....pound..	26.4	27.1	27.1	16.7	16.1	15.8	27.4	26.5	26.5	23.3	21.5	21.3	27.4	26.0	26.1
Eggs, strictly fresh ..dozen..	49.8	49.9	53.3	30.0	31.8	35.0	29.8	33.7	35.2	38.4	38.7	40.4	31.0	35.5	36.8
Bread.....pound..	9.2	8.7	8.7	8.5	8.2	8.2	8.1	7.9	7.9	10.9	10.1	10.1	9.6	9.8	9.6
Flour.....do....	5.8	6.0	5.9	5.2	5.3	5.4	5.5	5.5	5.4	6.7	6.6	6.7	5.2	5.5	5.3
Corn meal.....do....	6.8	7.0	6.9	4.2	4.1	4.1	4.2	4.1	4.1	4.2	4.3	4.3	5.0	5.3	5.3
Rolled oats.....do....	9.4	9.5	9.5	8.8	8.5	8.7	8.3	8.6	9.0	9.5	9.2	9.4	9.1	9.6	9.0
Corn flakes .....8-oz. package..	10.2	10.2	10.3	9.5	8.7	8.6	9.4	9.3	9.3	9.9	9.5	9.6	10.1	9.8	9.7
Wheat cereal .....28-oz. package..	25.0	25.3	25.3	25.4	24.7	25.1	25.5	25.2	25.2	24.4	24.1	24.1	26.3	26.6	26.9
Macaroni.....pound..	24.2	23.4	22.9	18.4	17.7	18.1	19.7	19.1	19.6	19.4	18.6	18.6	19.9	20.0	20.0
Rice.....do....	10.8	11.2	11.2	9.0	7.4	7.5	10.7	11.0	11.2	9.4	7.7	7.7	9.9	9.0	9.2
Beans, navy....do....	10.4	12.7	12.8	9.7	12.5	12.7	8.7	13.8	14.1	9.8	11.8	12.3	9.5	12.5	12.9
Potatoes.....do....	3.6	2.5	2.2	5.5	3.9	3.5	4.2	2.7	2.6	4.8	3.0	2.9	3.0	2.7	1.5
Onions.....do....	8.7	6.3	6.3	8.2	4.8	4.7	7.9	7.6	6.9	8.6	7.6	7.9	7.7	7.2	5.9
Cabbage.....do....	5.7	5.3	4.9	5.8	4.3	4.5	6.7	5.9	4.3	7.8	5.6	5.2	4.0	4.5	2.3
Beans, baked .....No. 2 can..	12.2	12.1	12.0	11.0	10.1	10.1	10.3	9.8	9.8	10.8	10.6	10.6	12.3	11.7	12.1
Corn, canned....do....	16.2	17.4	17.3	14.2	13.8	13.8	13.9	14.0	14.5	17.8	17.7	17.7	14.0	15.0	14.7
Peas, canned....do....	18.1	19.4	19.2	13.7	14.1	14.3	13.7	15.0	15.2	17.6	18.5	18.5	14.7	15.6	15.2
Tomatoes, canned .....No. 2 can..	13.2	12.1	12.1	10.7	9.8	9.9	13.0	12.7	11.9	10.3	9.9	9.7	11.5	11.3	11.2
Sugar.....pound..	7.3	7.2	7.1	7.1	7.2	7.1	7.5	7.6	7.6	7.8	7.3	7.4	7.6	7.7	7.7
Tea.....do....	63.8	58.2	58.2	84.8	81.6	83.3	87.9	86.3	85.8	98.9	100.0	98.9	90.1	93.3	93.9
Coffee.....do....	48.5	50.5	50.4	41.2	43.0	43.2	47.6	47.9	47.7	47.8	47.6	48.1	49.0	51.8	52.4
Prunes.....do....	14.8	13.3	13.4	15.0	12.6	13.3	18.5	15.7	16.5	16.1	14.1	15.6	16.4	14.4	14.3
Raisins.....do....	13.8	13.1	13.2	14.5	12.8	13.2	15.4	14.5	14.5	14.7	14.5	14.5	14.8	14.6	14.6
Bananas.....dozen..	[2]9.4	[2]9.0	[2]9.0	25.8	26.2	25.0	30.5	31.1	31.7	26.7	26.7	28.3	[2]10.3	[2]10.2	[2]10.1
Oranges.....do....	53.2	62.9	61.9	41.4	47.7	47.9	47.4	59.6	59.7	46.7	65.0	104.0	46.5	60.9	59.6

[1] The steak for which prices are here quoted is called "rump" in this city, but in most of the other cities included in this report it would be known as "porterhouse" steak.
[2] Per pound.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	Little Rock, Ark.			Los Angeles, Calif.			Louisville, Ky.			Manchester, N. H.			Memphis, Tenn.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Sirloin steak...pound..	37.8	43.6	44.5	37.4	41.3	41.9	37.7	42.7	46.5	[1] 62.6	[1] 63.5	[1] 68.7	37.3	43.7	46.4
Bound steak....do....	34.1	39.5	40.2	30.8	33.7	34.2	34.5	39.0	41.5	49.0	49.8	55.3	34.4	40.4	43.2
Rib roast.....do....	29.4	33.5	34.6	29.0	32.8	33.4	27.5	31.1	33.4	30.6	32.5	35.4	28.0	30.8	32.5
Chuck roast.....do....	22.3	27.1	27.1	20.2	23.2	23.8	21.3	25.9	26.7	24.7	28.1	30.2	20.3	25.6	27.7
Plate beef.....do....	16.9	21.0	20.2	13.6	16.0	16.8	17.3	20.9	20.8	17.4	20.4	22.3	16.1	19.7	21.2
Pork chops.....do....	31.4	32.8	33.4	41.9	41.3	46.3	32.1	31.2	35.8	32.4	33.9	36.5	29.1	30.0	32.6
Bacon, sliced....do....	47.1	43.2	44.5	55.0	49.0	51.5	47.3	43.0	44.2	38.9	36.8	38.1	40.3	36.9	37.2
Ham, sliced.....do....	51.3	49.9	49.5	66.7	64.7	69.0	49.2	48.5	49.2	46.6	43.9	46.0	54.0	49.4	52.1
Lamb, leg of....do....	40.8	41.4	40.6	37.2	37.6	37.5	42.0	40.7	36.0	40.3	41.7	41.3	38.7	38.5	37.5
Hens.....do....	27.3	29.7	29.2	41.1	42.6	42.1	34.5	36.0	35.9	42.9	42.1	42.8	28.4	30.6	29.4
Salmon, canned, red .....pound..	32.1	36.5	36.5	30.9	33.7	33.6	30.5	35.4	35.5	31.6	35.1	34.9	33.6	33.1	33.4
Milk, fresh.....quart..	15.0	14.0	14.0	15.0	15.0	15.0	12.0	12.0	12.0	13.8	15.0	15.0	15.0	15.0	15.0
Milk, evaporated .....15–16 oz. can..	12.0	11.7	11.7	10.3	9.7	9.6	11.9	11.6	11.6	12.7	12.5	12.5	11.6	11.6	11.6
Butter.....pound..	50.5	52.5	52.9	50.3	51.2	54.1	51.0	55.3	55.2	54.3	56.8	56.4	50.9	53.6	54.7
Oleomargarine (all butter substitutes) .....pound..	27.8	27.2	27.2	26.2	25.4	25.3	27.4	27.7	27.0	25.8	24.6	27.4	24.5	24.4	24.4
Cheese.....do....	36.8	36.7	37.4	38.2	38.0	38.1	37.1	37.1	37.2	36.7	38.5	38.6	33.8	35.2	36.4
Lard.....do....	21.0	20.8	21.1	19.2	19.5	19.9	18.1	17.3	17.5	18.2	17.9	17.8	16.1	16.2	16.5
Vegetable lard substitute.....pound..	20.0	20.1	20.5	24.3	23.7	24.1	28.7	26.8	27.8	26.1	26.2	26.2	20.2	21.5	21.1
Eggs, strictly fresh .....dozen..	33.4	35.4	38.1	34.8	36.0	40.9	28.2	34.2	37.9	48.2	46.1	53.0	32.1	34.7	38.0
Bread.....pound..	9.2	9.3	9.3	8.4	8.9	8.9	9.3	9.2	9.2	8.7	8.7	8.7	9.5	9.5	9.5
Flour.....do....	6.1	6.3	6.3	5.3	5.4	5.4	6.2	7.0	6.7	5.9	6.0	6.0	6.0	6.5	6.4
Corn meal.....do....	4.0	4.1	4.2	5.4	5.8	5.9	4.1	4.2	4.2	5.3	5.2	5.2	3.9	4.0	3.9
Rolled oats.....do....	10.3	10.2	10.2	10.0	10.1	10.1	8.6	8.6	8.6	9.1	8.9	8.9	9.1	8.9	8.8
Corn flakes .....8-oz. package..	10.2	9.8	9.8	9.5	9.5	9.4	9.6	9.4	9.4	9.7	9.2	9.2	9.8	9.7	9.8
Wheat cereal .....28-oz. package..	25.9	27.2	27.0	24.9	25.0	25.0	25.2	26.6	26.7	25.8	25.8	25.6	26.0	25.8	25.8
Macaroni.....pound..	20.1	20.5	20.1	18.4	18.0	18.0	18.9	18.9	18.6	23.7	23.5	23.2	18.9	19.6	19.5
Rice.....do....	8.6	7.7	8.1	10.2	10.2	10.2	11.5	11.4	11.1	10.0	9.2	9.2	8.3	8.5	8.4
Beans, navy.....do....	9.3	11.9	12.2	10.0	12.2	12.3	8.5	12.6	12.8	9.1	12.6	12.9	9.1	12.7	12.5
Potatoes.....do....	4.8	3.4	2.3	4.1	2.3	1.9	3.7	3.8	2.4	3.4	1.8	1.8	5.0	3.3	2.7
Onions.....do....	8.2	6.9	4.8	6.9	4.7	4.3	6.6	6.6	5.6	7.5	6.1	6.0	6.3	5.4	4.9
Cabbage.....do....	6.1	4.3	3.7	7.2	4.3	3.9	5.3	5.1	3.3	6.0	6.0	6.4	4.8	3.9	3.6
Beans, baked .....No. 2 can..	10.4	10.9	10.7	11.2	11.3	11.3	10.2	10.5	10.7	13.4	13.1	13.4	11.3	10.8	10.8
Corn, canned....do....	16.6	16.5	16.3	15.8	16.5	16.1	14.6	15.3	15.3	15.9	16.0	16.0	14.6	14.9	14.9
Peas, canned....do....	17.8	17.1	17.4	17.2	16.9	17.1	14.6	15.3	15.5	17.9	17.8	17.9	15.3	15.7	16.1
Tomates, canned .....No. 2 can..	10.7	10.0	9.8	[2] 14.5	[2] 14.8	[2] 15.0	10.9	10.5	10.3	13.1	12.1	11.9	9.8	9.6	9.8
Sugar.....pound..	7.9	8.0	7.9	7.0	7.1	7.0	7.7	7.7	7.6	7.6	7.4	7.3	7.3	7.3	7.2
Tea.....do....	107.4	103.5	103.3	74.7	74.8	75.7	90.4	89.5	89.2	63.5	65.2	64.6	98.8	99.1	99.1
Coffee.....do....	50.8	53.3	53.4	51.2	54.0	53.8	47.3	49.5	49.3	47.9	51.4	52.1	47.3	48.5	48.9
Prunes.....do....	17.6	14.9	15.2	14.5	12.4	12.7	16.3	15.4	15.8	14.2	12.6	12.8	13.8	14.2	14.3
Raisins.....do....	15.5	15.0	15.1	12.7	12.4	12.3	14.7	14.1	14.3	14.0	13.3	13.3	14.6	14.5	14.7
Bananas.....do....	8.1	8.8	7.5	9.3	8.8	8.2	9.8	9.5	9.5	9.2	8.7	8.2	8.3	8.1	7.7
Oranges.....dozen..	44.6	57.3	57.1	47.7	56.0	60.0	42.3	54.2	53.9	50.9	63.6	63.9	39.1	61.0	56.6

[1] The steak for which prices are here quoted is called "sirloin" in this city, but in most of the other cities included in this report it would be known as "porterhouse" steak.
[2] No. 2½ can.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	Milwaukee, Wis.			Minneapolis, Minn.			Mobile, Ala.			Newark, N. J.			New Haven, Conn.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Sirloin steak..pound..	40.5	44.0	45.7	35.8	41.7	43.5	35.0	39.4	39.4	48.8	51.1	55.6	58.3	58.5	62.9
Round steak....do....	36.1	39.6	41.5	32.2	38.4	37.8	34.1	38.9	38.9	46.3	49.0	52.2	46.3	48.1	49.6
Rib roast.....do....	29.2	32.9	33.7	29.2	33.4	33.4	29.5	31.1	32.0	38.1	40.6	42.5	38.8	39.1	40.5
Chuck roast....do....	25.3	28.6	29.9	23.9	28.2	28.9	22.7	25.6	26.7	25.8	30.8	32.5	28.8	30.3	31.9
Plate beef.....do....	14.8	18.2	18.7	13.9	17.8	18.3	17.7	20.5	20.6	14.2	17.8	18.9	16.7	17.4	18.7
Pork chops.....do....	33.0	33.7	37.3	32.2	36.3	36.8	36.4	35.0	35.0	36.6	34.5	38.5	35.1	35.5	38.4
Bacon, sliced....do....	46.3	43.2	44.5	47.1	45.5	45.5	47.3	40.4	40.8	46.0	43.3	44.0	46.2	44.3	44.8
Ham, sliced.....do....	49.9	46.4	48.4	53.5	47.5	50.5	50.7	47.1	47.9	54.3	52.5	56.3	58.9	58.7	60.5
Lamb, leg of....do....	41.8	44.0	41.8	36.5	40.4	37.3	41.4	40.0	39.2	41.6	42.8	42.5	42.3	46.3	43.5
Hens.....do....	31.3	32.2	32.3	31.8	34.7	32.6	34.0	32.6	32.4	37.1	38.0	38.3	40.8	42.0	42.5
Salmon, canned, red ..pound..	32.6	34.0	33.4	35.0	37.6	37.4	31.3	35.7	35.3	29.4	33.3	33.5	31.0	34.5	34.8
Milk, fresh.....quart..	11.0	11.0	11.0	11.0	12.0	12.0	17.8	18.0	18.0	15.0	15.0	16.0	16.0	16.0	16.0
Milk, evaporated ..15–16 oz. can..	11.2	10.7	10.8	11.7	11.5	11.5	11.7	11.1	11.1	11.3	10.8	10.8	12.0	11.9	11.7
Butter.....pound..	48.0	50.8	51.7	46.9	50.9	50.8	52.9	55.0	54.4	53.4	56.1	55.9	52.0	54.7	54.6
Oleomargarine (all butter substitutes) ..pound..	26.4	26.3	26.2	25.0	25.7	25.6	28.6	30.2	29.9	29.8	29.2	29.1	29.8	29.6	29.6
Cheese.....do....	34.9	37.0	37.0	35.9	36.4	37.2	35.2	36.7	37.0	39.9	40.0	39.8	39.0	41.4	41.4
Lard.....do....	19.0	18.3	18.3	18.1	18.3	18.3	19.1	18.6	18.3	19.3	18.6	18.1	18.1	18.7	18.6
Vegetable lard substitute.....pound..	26.5	26.5	26.5	27.1	27.4	27.3	20.4	20.6	20.5	25.5	25.6	25.5	25.4	26.1	26.1
Eggs, strictly fresh ..dozen..	30.2	33.9	36.3	29.5	34.8	35.8	38.4	34.8	35.8	44.6	47.1	49.3	51.9	51.0	56.8
Bread.....pound..	9.0	8.7	8.8	9.0	8.9	8.9	10.1	10.1	10.1	9.5	9.1	9.1	9.2	9.2	9.1
Flour.....do....	5.1	5.1	5.0	5.2	5.2	5.3	6.1	6.3	6.4	5.6	5.4	5.5	5.6	5.6	5.7
Corn meal.....do....	5.7	5.7	5.7	5.4	5.5	5.3	4.1	4.0	4.1	6.5	6.9	6.9	7.1	6.6	6.5
Rolled oats.....do....	8.4	8.4	8.4	8.1	8.0	8.0	8.3	8.5	8.3	8.4	8.3	8.4	9.3	9.3	9.2
Corn flakes ..8-oz. package..	9.4	9.3	9.2	10.4	9.7	9.7	9.6	9.3	9.3	9.3	8.7	8.8	10.1	9.9	9.8
Wheat cereal ..28-oz. package..	24.3	24.6	24.6	25.6	25.3	25.3	24.4	24.5	24.4	24.1	24.8	24.8	24.8	24.8	25.4
Macaroni.....pound..	17.9	17.5	17.5	18.9	18.4	18.4	20.9	21.1	21.3	20.9	21.4	21.4	22.2	22.3	21.9
Rice.....do....	10.7	10.2	10.0	10.5	9.5	9.5	9.5	8.7	8.7	10.5	9.3	9.8	10.9	10.3	10.1
Beans, navy....do....	8.3	12.9	13.1	9.3	13.4	13.5	8.8	11.5	11.6	9.7	12.4	12.0	9.5	11.7	11.5
Potatoes.....do....	3.6	2.6	2.1	4.0	2.2	1.5	6.0	2.8	2.6	3.6	3.4	2.4	3.6	2.8	2.2
Onions.....do....	8.5	5.8	5.6	9.6	7.1	6.4	6.8	5.4	4.7	7.6	6.2	6.1	9.1	7.3	6.7
Cabbage.....do....	5.8	5.8	4.5	5.0	6.7	2.4	6.6	4.0	4.2	5.7	6.6	5.0	5.7	6.7	5.8
Beans, baked ..No. 2 can..	11.0	11.4	11.4	12.2	12.3	12.3	10.6	10.2	10.1	10.8	10.6	10.6	11.1	11.7	11.7
Corn, canned...do....	15.2	16.2	15.9	13.5	15.1	15.0	16.1	15.6	15.6	15.0	17.3	17.3	18.6	17.8	18.1
Peas, canned....do....	15.1	15.9	16.0	14.1	15.0	15.1	15.7	15.7	15.7	15.3	17.4	17.2	19.2	20.4	20.5
Tomatoes, canned ..No. 2 can..	13.3	12.9	13.1	13.4	13.4	13.3	10.8	9.9	9.9	11.3	10.5	10.5	13.2	13.1	13.0
Sugar.....pound..	7.1	7.0	7.1	7.6	7.6	7.5	7.4	7.3	7.1	6.9	6.9	6.8	7.2	7.1	7.0
Tea.....do....	70.6	69.8	68.4	60.8	62.8	62.1	77.8	78.3	78.1	62.8	60.2	59.1	57.4	59.2	59.9
Coffee.....do....	42.4	45.0	45.0	50.3	53.3	53.2	47.4	47.9	46.7	46.9	49.2	49.4	49.0	51.7	51.9
Prunes.....do....	15.4	13.9	13.9	15.6	14.1	14.0	17.2	13.6	14.9	14.5	13.0	12.9	15.7	13.8	13.5
Raisins.....do....	14.6	13.8	14.1	15.0	14.3	14.3	14.4	13.0	13.4	14.3	13.3	13.4	14.1	13.7	13.5
Bananas.....dozen..	[1] 9.3	[1] 9.0	[1] 8.8	[1] 10.8	[1] 9.6	[1] 9.7	22.8	24.4	25.0	37.5	38.0	37.0	34.5	34.2	34.2
Oranges.....do....	49.0	61.7	63.1	48.7	61.1	59.1	47.1	55.9	56.3	51.7	68.0	68.0	56.1	71.4	71.5

[1] Per pound.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	New Orleans, La.			New York, N. Y.			Norfolk, Va.			Omaha, Nebr.			Peoria, Ill.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Sirloin steak..pound..	37.0	41.5	42.6	49.1	51.0	53.5	41.8	44.5	46.9	39.5	43.7	47.1	36.5	40.5	43.5
Round steak....do....	32.9	37.5	38.3	46.4	48.3	50.6	36.8	39.1	41.8	37.6	42.5	45.5	34.6	39.7	42.3
Rib roast.....do....	31.2	34.9	35.0	40.8	43.2	44.5	33.4	35.5	37.5	27.2	30.4	32.1	25.7	30.7	33.2
Chuck roast.....do....	21.8	24.3	25.5	26.9	30.3	30.0	24.3	26.0	27.8	22.9	28.3	29.6	21.8	27.7	28.6
Plate beef.....do....	17.7	18.9	19.7	20.8	23.3	23.8	15.9	18.0	18.4	13.2	15.7	16.5	14.4	18.3	19.3
Pork chops.....do....	35.2	34.5	36.5	39.2	38.6	40.5	35.2	32.5	34.0	33.5	32.9	34.4	31.5	31.0	33.5
Bacon, sliced....do....	47.0	41.1	41.9	47.4	45.8	46.7	44.1	41.8	41.9	50.0	45.2	46.1	50.8	43.8	44.6
Ham, sliced.....do....	51.1	48.0	49.0	58.7	57.7	57.8	48.0	46.0	46.0	54.1	49.6	51.6	54.2	49.2	50.4
Lamb, leg of....do....	40.1	40.2	39.8	40.6	42.1	40.2	42.1	44.2	46.7	38.7	40.3	40.6	41.3	41.1	39.9
Hens.....do....	34.8	34.6	34.4	38.2	40.0	39.4	36.7	36.5	36.2	30.0	31.8	31.9	33.6	32.6	32.7
Salmon, canned, red ..pound..	36.9	35.3	35.9	30.6	34.4	34.3	33.9	35.9	37.5	34.5	36.2	36.2	33.5	35.8	36.8
Milk, fresh.....quart..	14.0	14.0	14.0	15.0	15.0	15.5	17.5	18.0	18.0	10.3	10.3	11.3	13.0	13.0	13.0
Milk, evaporated .....15–16 oz. can..	11.3	10.7	10.8	11.1	10.6	10.7	11.8	11.4	11.2	11.8	11.2	11.4	11.4	11.1	11.1
Butter.....pound..	51.8	54.7	54.9	52.9	53.8	54.5	54.7	58.4	58.2	49.4	49.1	49.7	47.3	49.2	49.2
Oleomargarine (all butter substitutes) ..pound..	28.8	28.3	28.3	27.9	27.9	27.6	27.7	25.0	25.0	26.1	25.8	25.8	27.9	27.7	27.6
Cheese.....do....	36.8	38.2	38.9	38.6	41.1	41.0	35.0	34.8	35.2	36.4	36.1	36.5	36.4	37.2	37.6
Lard.....do....	19.2	18.1	18.3	19.9	19.0	19.2	18.8	17.9	17.7	20.5	19.1	19.3	18.7	18.0	18.1
Vegetable lard substitute.....pound..	18.8	19.6	19.7	26.0	25.8	25.9	22.8	21.7	21.3	26.0	25.5	25.5	27.8	27.7	27.4
Eggs, strictly fresh ..dozen..	36.4	35.1	39.2	47.2	48.3	49.8	34.7	39.1	42.5	28.7	32.7	34.1	29.2	32.8	34.6
Bread.....pound..	8.8	8.9	8.9	9.7	8.8	8.7	9.9	9.9	9.9	9.8	9.7	9.7	10.0	10.0	10.0
Flour.....do....	6.7	7.1	7.1	5.7	5.5	5.5	5.6	5.8	5.9	4.6	4.7	4.5	5.2	5.4	5.3
Corn meal.....do....	4.3	4.0	4.0	6.4	6.5	6.6	4.6	4.7	4.7	4.7	4.5	4.6	4.8	5.0	4.8
Rolled oats.....do....	9.0	8.7	8.8	8.7	8.7	8.6	8.8	8.5	8.5	10.1	9.9	9.9	8.9	8.8	8.8
Corn flakes .....8-oz. package..	9.9	9.7	9.6	9.1	8.6	8.6	9.6	9.6	9.7	10.5	10.2	10.2	10.2	9.6	9.6
Wheat cereal .....28-oz. package..	24.7	24.8	24.8	24.0	24.2	24.2	25.0	24.8	24.8	28.0	27.9	28.0	26.3	26.1	26.3
Macaroni.....pound..	10.5	10.8	10.8	20.9	20.7	20.8	19.1	19.0	19.0	21.3	20.7	21.2	18.6	18.5	18.9
Rice.....do....	9.9	9.3	9.4	9.6	9.8	9.9	11.7	11.0	11.0	11.1	11.1	11.1	11.4	10.6	10.7
Beans, navy....do....	8.4	10.9	10.8	10.0	12.5	12.8	8.1	11.3	11.7	10.1	12.7	13.1	8.9	13.7	14.3
Potatoes.....do....	5.0	3.0	2.9	3.7	3.0	2.5	3.8	3.3	2.1	3.7	2.4	1.8	4.2	2.4	2.0
Onions.....do....	5.1	3.9	4.2	7.3	6.3	6.2	7.4	6.8	6.2	8.9	6.4	5.9	9.6	7.2	6.5
Cabbage.....do....	4.8	4.3	4.3	4.4	5.2	4.3	5.2	3.5	3.3	3.8	5.2	1.8	6.2	6.4	3.8
Beans, baked .....No. 2 can..	10.6	10.9	10.9	10.5	11.3	11.4	9.8	9.9	10.0	13.0	13.3	13.1	11.1	10.3	10.5
Corn, canned....do....	15.2	15.2	15.3	13.8	15.4	15.3	14.9	14.8	14.8	16.2	16.4	16.3	14.6	15.0	15.2
Peas, canned....do....	16.6	17.3	17.2	14.7	15.6	15.8	19.2	17.5	18.2	15.3	15.9	15.9	16.7	16.3	16.3
Tomatoes, canned .....No. 1 can..	10.8	10.3	10.3	11.4	10.9	11.0	9.9	9.5	9.7	13.1	12.9	13.4	12.2	12.2	12.2
Sugar.....pound..	6.9	6.7	6.6	6.7	6.7	6.6	7.1	6.9	6.9	7.9	7.3	7.4	8.6	8.1	8.1
Tea.....do....	79.1	78.3	79.8	66.3	68.5	68.0	95.8	94.1	93.8	78.4	77.2	77.2	70.9	66.0	66.7
Coffee.....do....	35.6	35.9	35.5	44.2	46.0	46.0	47.8	49.0	49.5	53.5	53.7	53.7	47.5	48.6	48.8
Prunes.....do....	16.7	14.4	14.5	14.1	13.1	13.3	15.4	13.2	13.3	16.5	14.6	14.6	18.0	15.0	15.4
Raisins.....do....	13.9	12.7	12.7	14.1	13.3	13.4	14.3	13.8	13.7	15.3	14.4	14.5	14.5	13.8	14.3
Bananas.....dozen..	15.7	17.9	16.4	35.6	37.7	37.0	33.2	33.5	34.5	[1] 10.6	[1] 10.3	[1] 9.9	[1] 9.8	[1] 7.9	[1] 8.5
Oranges.....do....	53.8	61.3	57.5	58.1	75.2	71.0	55.0	61.3	63.1	43.2	57.0	52.5	49.0	56.0	57.0

[1] Per pound.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	Philadelphia, Pa.			Pittsburgh, Pa.			Portland, Me.			Portland, Oreg.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.
Sirloin steak, pound	[1] 60.8	[1] 63.0	[1] 65.9	49.0	53.6	55.5	[1] 66.1	[1] 68.3	[1] 70.7	31.4	35.5	35.2
Round steak, do	47.1	48.4	52.6	41.3	44.1	47.7	49.2	50.4	54.1	28.7	33.4	33.1
Rib roast, do	38.8	40.9	42.3	35.0	38.9	40.0	31.8	34.2	35.8	25.9	29.8	29.7
Chuck roast, do	28.3	32.4	34.7	27.0	31.4	32.7	22.5	25.7	27.9	19.6	23.4	23.1
Plate beef, do	13.8	17.6	18.9	13.5	18.2	19.2	18.6	20.4	22.2	14.1	18.6	18.3
Pork chops, do	39.9	39.6	41.0	38.3	36.6	39.9	34.1	35.5	37.6	36.0	32.5	35.8
Bacon, sliced, do	45.5	41.9	42.3	50.8	47.6	47.8	43.5	40.3	41.7	53.7	49.7	50.6
Ham, sliced, do	59.6	53.4	56.3	60.7	58.4	59.4	55.5	49.6	51.3	56.0	54.1	54.4
Lamb, leg of, do	43.8	45.2	43.7	43.8	45.2	43.5	43.0	44.6	42.5	37.2	37.6	37.5
Hens, do	38.9	41.3	41.1	42.7	45.3	44.4	42.3	41.9	42.3	32.5	34.3	34.8
Salmon, canned, red, do	27.5	32.2	32.5	30.4	33.6	34.1	30.2	35.9	35.6	32.6	34.8	34.8
Milk, fresh, quart	13.0	13.0	13.0	14.0	13.0	13.0	13.8	15.0	15.0	12.0	12.0	12.0
Milk, evaporated 15–16 oz. can	11.6	11.6	11.5	11.2	10.4	10.4	12.4	12.2	12.2	10.9	10.0	10.0
Butter, pound	54.9	58.4	58.1	52.6	54.1	55.1	54.7	57.9	57.1	49.7	50.9	53.3
Oleomargarine (all butter substitutes), pound	28.3	28.8	28.5	30.1	28.4	28.3	27.5	26.6	26.6	28.9	26.6	25.8
Cheese, do	39.4	42.4	42.5	40.0	41.8	41.3	38.0	38.8	39.1	37.1	38.1	38.0
Lard, do	17.4	17.4	17.7	18.6	17.9	18.1	18.4	17.6	17.7	20.4	19.8	19.5
Vegetable lard substitute, pound	25.7	24.8	24.7	27.5	27.2	27.1	25.8	26.2	26.2	28.9	28.7	28.3
Eggs, strictly fresh, dozen	38.5	42.5	44.6	38.7	42.3	43.8	46.2	45.8	50.1	31.5	34.3	37.9
Bread, pound	9.4	9.3	9.2	9.1	8.5	9.1	10.0	10.1	10.1	9.3	9.2	9.2
Flour, do	5.4	5.3	5.4	5.3	5.3	5.3	5.5	5.8	5.8	5.1	5.0	5.1
Corn meal, do	4.7	5.1	5.3	5.5	6.2	6.0	5.1	5.1	5.0	5.7	6.0	5.9
Rolled oats, do	8.7	8.5	8.5	9.1	9.0	9.1	8.1	8.0	8.0	10.6	10.5	10.5
Corn flakes, 8-oz. package	9.5	9.1	9.0	10.1	9.6	9.6	9.9	9.6	9.5	9.4	9.7	9.5
Wheat cereal 28-oz. package	24.4	25.2	25.4	25.1	24.9	25.0	25.6	25.4	25.4	26.6	26.8	26.8
Macaroni, pound	20.3	20.7	20.7	23.5	22.5	22.6	24.4	23.1	23.2	18.4	18.5	18.6
Rice, do	11.4	10.3	10.3	11.7	11.1	11.3	12.6	11.4	11.3	10.4	10.1	10.2
Beans, navy, do	9.1	11.1	11.0	8.9	12.0	12.6	9.7	12.4	12.5	11.3	12.8	12.8
Potatoes, do	4.2	3.6	2.5	3.8	2.9	1.8	3.6	1.9	2.0	4.2	2.6	2.6
Onions, do	6.9	5.4	5.4	8.6	6.5	6.3	8.0	6.2	5.8	6.5	4.8	4.4
Cabbage, do	4.8	5.5	4.6	6.8	6.3	4.3	6.1	6.1	5.7	4.7	6.0	4.1
Beans, baked, No. 2 can	10.8	11.1	11.1	12.3	12.8	12.7	14.4	15.4	14.9	12.0	11.8	12.3
Corn, canned, do	14.1	14.7	14.7	15.6	15.9	16.0	14.2	14.6	14.2	19.3	17.9	17.9
Peas, canned, do	14.9	15.6	15.4	16.8	17.1	16.6	17.5	17.9	17.4	19.1	17.3	17.3
Tomatoes, canned, do	12.1	11.3	11.5	12.5	11.9	11.5	12.8	11.7	11.7	[2] 16.9	[2] 15.4	[2] 15.6
Sugar, pound	6.7	6.7	6.8	7.5	7.3	7.4	7.3	7.2	7.2	7.3	7.1	7.0
Tea, do	68.2	68.7	69.7	83.9	81.3	80.2	62.2	62.2	62.2	77.3	79.5	80.7
Coffee, do	39.7	44.3	44.0	47.2	48.9	49.2	49.6	52.1	52.1	51.1	52.9	53.2
Prunes, do	13.7	12.5	12.8	16.7	14.4	14.4	14.5	11.3	11.6	11.6	10.6	11.2
Raisins, do	13.5	13.1	13.4	14.3	13.5	13.5	13.6	12.4	12.3	13.7	13.0	13.2
Bananas, dozen	28.7	29.9	30.3	38.0	35.6	37.2	[3] 10.7	[3] 9.6	[3] 10.3	[3] 12.5	[3] 9.7	[3] 9.3
Oranges, do	50.6	67.8	66.2	54.0	62.9	68.6	57.3	68.8	68.1	47.0	55.5	60.2

[1] The steak for which prices are here quoted is called "sirloin" in this city, but in most of the other cities included in this report it would be known as "porterhouse" steak.
[2] No. 2½ can.
[3] Per pound.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	Providence, R. I.			Richmond, Va.			Rochester, N. Y.			St. Louis, Mo.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Sirloin steak, pound	[1] 74.9	[1] 78.7	[1] 80.4	40.4	44.6	46.0	43.0	47.1	50.4	38.6	42.1	47.4
Round steak, do	52.1	55.1	57.7	35.8	39.6	40.9	35.5	39.4	42.1	37.6	40.7	46.0
Rib roast, do	40.5	42.4	44.3	32.2	34.4	35.2	31.7	34.6	36.8	30.7	34.4	36.2
Chuck roast, do	31.6	33.4	35.9	23.9	26.1	27.1	25.2	29.4	31.7	21.5	26.4	29.0
Plate beef, do	18.2	21.7	22.3	17.2	19.3	19.7	13.8	16.8	17.9	14.3	18.1	19.1
Pork chops, do	36.9	38.6	42.0	35.9	34.4	36.4	38.0	38.6	41.1	29.1	30.7	36.0
Bacon, sliced, do	41.9	40.7	41.3	43.2	40.1	39.9	41.2	36.9	37.9	42.2	40.5	41.3
Ham, sliced, do	57.0	54.2	56.1	45.6	44.3	44.5	53.7	50.7	52.7	50.0	51.3	52.9
Lamb, leg of	43.2	45.3	43.3	44.4	47.7	46.4	40.0	43.7	40.6	38.8	38.4	38.8
Hens, do	37.8	42.4	41.7	33.0	35.2	34.0	39.7	40.9	40.4	32.6	34.1	33.6
Salmon, canned, red, do	31.9	34.1	34.2	34.5	35.4	35.4	30.5	35.5	34.8	33.6	35.3	34.7
Milk, fresh, quart	14.5	14.5	15.3	14.0	14.0	14.0	12.5	12.5	12.5	13.0	13.0	13.0
Milk, evaporated, 15–16 oz. can	12.1	11.5	11.5	12.6	12.2	12.1	11.4	11.1	11.2	11.0	10.0	10.0
Butter, pound	51.1	54.0	54.8	57.1	59.4	59.4	52.0	53.6	53.8	52.3	54.2	55.3
Oleomargarine (all butter substitutes), pound	27.3	26.8	25.7	31.4	29.9	29.9	28.8	28.4	28.2	26.9	26.9	26.8
Cheese, do	36.8	38.4	38.9	36.1	37.3	37.2	34.2	38.6	38.7	35.5	36.4	36.8
Lard, do	18.3	17.3	17.6	18.2	17.1	17.2	17.6	17.0	16.9	15.0	14.6	15.2
Vegetable lard substitute, do	26.4	26.3	26.5	25.5	25.7	25.9	24.3	26.2	26.3	25.8	25.3	25.3
Eggs, strictly fresh, dozen	50.9	47.3	53.8	34.0	37.1	37.6	34.0	39.0	40.5	30.9	36.6	36.8
Bread, pound	9.1	9.0	9.0	9.4	9.2	9.1	9.0	9.1	9.0	9.9	9.6	9.6
Flour, do	6.0	5.9	5.9	5.5	5.6	5.7	5.5	5.6	5.6	5.3	5.4	5.4
Corn meal, do	5.1	5.1	5.0	4.9	4.8	4.9	5.4	6.3	6.4	4.5	4.2	4.3
Rolled oats, do	9.1	9.0	9.1	8.6	8.6	8.6	9.2	9.4	9.2	8.4	8.0	8.1
Corn flakes, 8-oz. package	9.8	9.4	9.4	9.6	9.4	9.4	9.5	9.2	9.2	8.8	8.8	8.9
Wheat cereal, 28-oz. package	25.1	24.8	24.8	26.0	26.0	26.0	24.5	25.6	25.6	24.7	24.8	24.8
Macaroni, pound	23.4	22.9	22.6	20.4	19.9	19.9	19.5	21.1	20.6	19.8	19.7	19.2
Rice, do	10.7	10.1	10.3	11.9	11.1	10.7	10.9	9.6	9.5	10.2	9.7	9.6
Beans, navy, do	9.8	12.9	12.5	9.0	13.0	13.0	8.9	12.7	13.1	8.3	12.3	12.4
Potatoes, do	3.5	2.5	1.9	3.9	4.0	2.7	3.5	2.3	1.9	4.5	3.3	2.2
Onions, do	8.2	6.1	5.8	8.3	7.3	6.6	7.5	6.4	5.9	7.1	5.6	5.0
Cabbage, do	5.0	5.5	4.0	3.7	5.5	5.0	7.0	6.8	3.8	4.9	4.5	2.6
Beans, baked, No. 2 can	11.4	10.8	10.9	10.1	10.3	10.4	10.2	10.2	10.2	10.1	10.3	10.3
Corn, canned, do	16.3	17.1	17.1	15.0	15.0	15.2	14.7	16.3	16.1	15.2	15.4	15.3
Peas, canned, do	18.4	18.3	18.2	19.1	17.8	18.1	16.9	17.7	17.4	15.0	14.8	14.7
Tomatoes, canned, do	13.0	12.9	12.9	10.6	10.6	10.7	13.1	14.3	13.9	11.3	10.5	10.5
Sugar, pound	7.1	7.0	7.0	7.3	7.0	7.0	6.8	6.8	6.8	7.3	7.3	7.2
Tea, do	60.9	60.1	60.1	91.4	89.8	89.8	68.3	69.0	70.9	76.5	74.3	76.4
Coffee, do	48.7	50.9	50.9	45.6	47.2	47.1	41.4	47.4	48.3	45.6	47.1	46.8
Prunes, do	14.5	12.9	12.9	15.4	14.0	14.1	15.9	13.5	13.9	18.0	14.4	14.8
Raisins, do	14.2	13.4	13.3	14.2	13.3	13.3	14.6	13.9	14.0	14.3	13.9	13.9
Bananas, dozen	30.8	32.1	31.1	36.7	36.4	35.9	35.0	31.7	31.2	31.2	31.7	31.2
Oranges, do	58.7	73.9	75.1	52.3	64.4	67.0	49.6	64.1	63.1	49.2	58.7	59.3

[1] The steak for which prices are here quoted is called "sirloin" in this city, but in most of the other cities included in this report it would be known as "porterhouse" steak.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	St. Paul, Minn.			Salt Lake City, Utah			San Francisco, Calif.			Savannah, Ga.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Sirloin steak, pound	39.9	43.3	44.7	33.6	36.3	37.2	33.2	37.1	37.3	35.5	41.1	41.7
Round steak, do	34.7	37.2	39.0	31.1	35.6	35.8	30.4	34.5	34.7	29.0	34.4	34.4
Rib roast, do	32.4	34.9	35.6	25.9	28.2	28.3	30.1	33.1	33.0	28.0	30.6	31.1
Chuck roast, do	26.1	28.6	29.9	20.0	23.5	23.7	19.2	21.8	22.4	18.8	23.0	23.6
Plate beef, do	14.6	17.0	17.8	14.4	16.7	16.7	14.8	16.9	17.4	15.0	19.8	20.3
Pork chops, do	30.7	32.3	36.0	32.7	36.0	36.4	40.2	39.5	41.6	32.0	30.6	30.3
Bacon, sliced, do	45.1	43.6	44.9	47.2	44.8	44.8	58.2	54.6	54.6	41.0	38.2	38.1
Ham, sliced, do	48.9	46.4	49.4	57.5	51.9	55.8	64.1	60.0	60.7	45.5	41.5	41.5
Lamb, leg of, do	35.1	37.7	36.9	36.7	40.7	38.3	38.6	39.2	39.0	41.0	42.5	40.0
Hens, do	29.5	32.7	30.7	29.6	33.3	32.3	42.4	42.0	41.1	30.0	30.0	30.0
Salmon, canned, red, do	36.0	39.6	39.8	33.4	35.6	34.9	29.9	32.2	32.5	33.3	35.9	35.9
Milk, fresh, quart	11.0	12.0	12.0	11.0	10.0	10.0	14.0	14.0	14.0	17.0	16.0	16.0
Milk, evaporated, 15–16 oz. can	11.7	11.7	11.7	10.6	10.1	10.1	10.5	10.0	9.9	11.4	11.0	11.0
Butter, pound	46.6	49.0	49.3	46.6	47.6	50.2	51.4	52.6	54.5	52.7	55.2	54.5
Oleomargarine (all butter substitutes), pound	24.8	24.1	23.9	28.9	25.8	25.8	30.3	25.4	25.4	32.1	30.2	29.9
Cheese, do	35.8	36.4	36.2	30.7	30.9	30.9	38.7	40.8	40.4	35.1	35.2	34.6
Lard, do	18.4	18.5	18.5	21.0	20.3	20.2	23.0	22.2	22.3	18.4	16.9	17.4
Vegetable lard substitute, do	28.1	27.8	28.3	29.4	28.9	29.0	28.3	27.5	27.3	16.7	17.3	17.3
Eggs, strictly fresh, dozen	29.7	34.3	36.0	28.6	31.9	36.2	33.9	36.5	40.6	38.0	36.8	42.8
Bread, pound	10.0	9.3	9.3	9.7	9.7	9.7	9.5	9.5	9.5	10.7	10.6	10.6
Flour, do	5.4	5.3	5.2	4.2	4.3	4.2	5.8	5.9	5.8	6.6	6.9	6.7
Corn meal, do	5.2	5.3	5.1	5.6	5.6	5.7	6.5	6.9	7.0	3.8	3.7	3.7
Rolled oats, do	10.2	9.8	9.9	8.8	8.4	8.6	9.8	10.0	10.0	8.6	8.5	8.5
Corn flakes, 8-oz. package	10.8	10.1	10.1	10.6	10.0	9.8	10.0	9.6	9.7	9.6	9.5	9.5
Wheat cereal, 28-oz. package	26.4	26.1	26.7	25.5	25.5	25.1	25.3	25.2	25.2	24.3	24.3	24.4
Macaroni, pound	18.7	18.8	18.8	20.0	19.9	19.6	15.6	15.8	15.8	18.2	18.0	18.2
Rice, do	10.7	10.2	10.5	9.2	8.5	8.6	11.3	10.1	10.1	9.9	9.2	8.9
Beans, navy, do	9.6	13.2	13.3	9.3	11.3	11.3	10.0	11.9	11.8	9.3	11.3	11.8
Potatoes, do	3.7	1.8	1.7	3.7	2.2	1.7	4.7	3.0	2.7	4.6	3.6	3.3
Onions, do	8.5	6.6	6.0	7.6	7.0	6.4	5.5	5.3	4.4	8.1	7.6	7.1
Cabbage, do	3.3	5.9	3.1	4.1	8.5	3.7	-----	-----	-----	5.9	4.9	4.6
Beans, baked, No. 2 can	13.6	13.8	13.8	13.3	12.0	12.1	13.0	13.0	12.9	12.1	11.6	11.6
Corn, canned, do	14.3	15.1	14.9	14.6	13.8	14.0	17.9	17.5	17.4	15.1	15.3	15.3
Peas, canned, do	15.3	14.9	14.7	15.7	15.0	14.9	17.8	18.3	18.3	16.9	15.7	16.0
Tomatoes, canned, do	14.3	14.0	14.0	13.6	13.9	13.8	[1] 15.0	[1] 14.2	[1] 14.0	10.1	9.7	9.7
Sugar, pound	7.5	7.5	7.5	8.0	7.8	7.8	7.0	6.9	6.8	7.2	7.0	7.1
Tea, do	67.4	67.0	67.0	86.5	86.0	84.6	71.8	71.4	71.4	81.7	81.3	82.3
Coffee, do	50.8	53.8	53.3	54.9	53.4	53.7	51.9	54.1	54.1	45.3	45.9	45.9
Prunes, do	15.7	13.5	13.4	14.4	11.8	12.8	13.0	11.8	11.6	14.8	12.4	12.5
Raisins, do	15.6	14.5	14.5	13.5	13.0	13.2	13.1	12.0	11.9	14.7	13.5	13.3
Bananas, dozen	[2] 10.6	[2] 9.9	[2] 10.2	[2] 12.4	[2] 12.1	[2] 12.3	31.9	29.1	27.8	30.4	25.0	27.0
Oranges, do	48.9	61.1	63.9	45.1	55.6	56.9	50.0	58.2	57.6	46.9	58.2	57.7

[1] No. 2½ can.

[2] Per pound.

TABLE 4.—AVERAGE RETAIL PRICES OF THE PRINCIPAL ARTICLES OF FOOD IN 51 CITIES, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

Article	Scranton, Pa.			Seattle, Wash.			Springfield, Ill.			Washington, D. C.		
	July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928		July 15, 1927	1928	
		June 15	July 15		June 15	July 15		June 15	July 15		June 15	July 15
	Cts.	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*	*Cts.*
Sirloin steak, pound	52.1	58.9	63.5	34.7	39.3	40.5	37.9	44.8	47.1	49.4	51.9	56.6
Round steak, do	43.8	49.3	52.0	30.8	35.3	36.5	36.9	44.5	46.6	42.9	44.6	49.3
Rib roast, do	37.6	40.3	43.2	28.0	31.5	32.2	24.4	30.6	31.6	35.3	37.1	39.4
Chuck roast, do	28.8	33.0	34.5	20.3	24.2	24.9	22.8	28.4	30.7	26.9	29.6	32.3
Plate beef, do	12.6	16.1	16.2	15.4	18.8	19.2	13.8	19.0	19.5	13.9	18.1	18.4
Pork chops, do	39.5	38.5	40.2	38.3	37.0	39.4	30.0	31.8	33.1	37.4	36.6	40.3
Bacon, sliced, do	48.0	45.6	46.6	57.5	52.9	54.3	45.8	43.6	44.1	43.9	39.3	41.7
Ham, sliced, do	60.6	55.4	57.1	61.1	58.0	60.0	50.8	48.2	51.4	57.1	56.1	57.5
Lamb, leg of, do	47.5	50.0	49.5	36.6	39.5	39.2	41.7	45.8	43.6	42.1	45.3	44.4
Hens, do	43.1	43.2	43.8	31.9	34.9	34.3	32.5	34.1	34.1	38.6	40.4	40.7
Salmon, canned, red, do	33.4	35.8	35.0	34.6	37.3	36.5	34.8	37.6	37.4	31.2	35.0	34.5
Milk, fresh, quart	12.0	13.0	13.0	12.0	12.0	12.0	14.3	14.4	14.4	15.0	15.0	15.0
Milk, evaporated, 15–16 oz. can	12.0	11.8	11.8	10.7	10.1	10.2	11.8	11.7	11.8	12.0	11.9	11.8
Butter, pound	52.1	56.1	56.1	51.0	51.1	53.8	49.0	51.9	53.0	53.8	57.4	57.7
Oleomargarine (all butter substitutes), pound	28.4	27.3	27.3	28.2	25.0	25.1	28.0	28.5	28.3	28.5	27.2	27.6
Cheese, do	35.7	38.4	38.8	34.7	35.2	35.3	36.6	37.8	38.8	39.1	39.9	39.9
Lard, do	18.9	18.9	19.0	20.3	20.0	20.4	18.1	18.0	18.1	17.5	17.6	18.0
Vegetable lard substitute, do	26.1	26.2	26.3	27.3	27.6	27.6	27.3	27.6	27.8	24.5	24.7	24.7
Eggs, strictly fresh, dozen	38.7	41.1	44.2	32.0	34.4	37.5	30.5	33.3	36.0	38.5	41.1	43.7
Bread, pound	10.7	10.8	10.7	9.7	9.6	9.6	10.3	10.2	10.2	9.0	8.9	8.9
Flour, do	5.9	6.0	5.9	5.2	5.1	5.0	5.7	5.4	5.5	5.8	5.9	6.0
Corn meal, do	7.8	7.6	7.7	5.9	5.6	5.6	4.8	4.5	4.7	5.2	5.1	5.2
Rolled oats, do	9.7	9.9	9.9	8.7	8.7	8.5	9.9	9.7	9.9	9.3	9.1	9.1
Corn flakes, 8-oz. package	10.1	9.9	9.9	10.3	9.6	9.7	10.2	10.3	9.8	9.5	9.4	9.4
Wheat cereal, 28-oz. package	25.1	25.6	25.6	27.7	26.7	26.6	27.3	28.1	28.1	24.4	24.8	24.8
Macaroni, pound	22.9	22.9	22.5	18.2	17.7	17.9	18.9	19.2	19.4	22.1	22.6	22.6
Rice, do	11.1	10.2	10.3	12.0	10.3	10.7	10.9	10.2	10.3	11.5	10.8	10.7
Beans, navy, do	10.6	11.7	12.1	11.0	12.7	12.9	9.1	13.7	13.7	8.8	12.5	12.7
Potatoes, do	3.7	3.0	2.0	4.8	2.5	2.0	4.8	2.7	2.3	3.8	3.4	2.3
Onions, do	7.6	6.7	6.9	6.9	5.7	4.4	9.3	7.7	7.1	7.3	7.3	6.6
Cabbage, do	5.1	5.7	4.8	6.1	5.8	4.4	5.5	6.5	3.6	4.2	5.1	4.3
Beans, baked, No. 2 can	11.3	11.5	11.5	11.9	11.7	11.5	10.3	10.3	10.7	10.1	10.3	10.5
Corn, canned, do	16.6	17.5	17.3	17.3	18.2	18.4	14.5	15.0	14.8	14.3	15.1	15.1
Peas, canned, do	17.4	17.6	17.8	18.5	19.1	19.4	15.6	15.7	15.9	16.2	15.4	15.2
Tomatoes, canned, do	12.6	12.1	12.1	[1] 16.9	[1] 15.8	[1] 16.1	13.6	13.3	13.4	10.1	10.3	10.0
Sugar, pound	7.2	7.2	7.1	7.4	7.1	7.1	7.9	7.9	7.9	7.1	7.1	7.0
Tea, do	71.2	68.1	68.1	75.7	75.7	76.0	84.6	85.0	84.6	91.4	94.3	96.3
Coffee, do	49.1	50.4	51.2	49.1	51.2	51.4	49.3	52.2	52.4	42.8	48.1	47.5
Prunes, do	16.0	14.1	14.1	14.0	12.2	12.3	15.9	14.4	14.4	17.0	14.1	14.5
Raisins, do	14.7	13.9	14.0	14.0	13.1	13.1	15.8	14.3	14.3	14.4	13.8	13.8
Bananas, dozen	33.2	32.3	31.2	[2] 12.2	[2] 9.6	[2] 10.1	[2] 9.5	[2] 7.7	[2] 8.4	30.9	29.1	28.2
Oranges, do	55.5	69.2	71.4	45.7	57.8	57.6	45.2	68.6	69.3	56.5	72.5	69.1

[1] No. 2½ can.

[2] Per pound.

Comparison of Retail Food Costs in 51 Cities

TABLE 5 shows for 39 cities the percentage of increase or decrease in the retail cost of food [3] in July, 1928, compared with the average cost in the year 1913, in July, 1927, and June, 1928. For 12 other cities comparisons are given for the one-year and the one-month periods; these cities have been scheduled by the bureau at different dates since 1913. The percentage changes are based on actual retail prices secured each month from retail dealers and on the average family consumption of these articles in each city.[4]

TABLE 5.—PERCENTAGE CHANGE IN RETAIL COST OF FOOD IN JULY, 1928, COMPARED WITH THE COST IN JUNE, 1928, JULY, 1927, AND WITH THE AVERAGE COST IN THE YEAR 1913, BY CITIES

City	Percentage increase July, 1928, compared with—			City	Percentage increase July, 1928, compared with—		
	1913	July, 1927	June, 1928		1913	July, 1927	June, 1928
Atlanta	55.5	[1] 1.8	[1] 0.6	Minneapolis	52.3	[1] 0.7	[1] 2.1
Baltimore	58.4	1.2	0.0	Mobile	----------	[1] 4.2	[1] 0.3
Birmingham	57.9	[1] 1.2	0.5	Newark	48.1	1.4	0.6
Boston	54.1	0.2	1.6	New Haven	54.4	0.2	0.3
Bridgeport	----------	0.0	1.1	New Orleans	51.9	[1] 0.5	1.1
Buffalo	54.9	0.2	[1] 1.1	New York	54.1	[1] 0.9	0.1
Butte	----------	[1] 2.0	2.7	Norfolk	----------	0.4	[1] 0.1
Charleston, S. C	53.0	[1] 1.6	[1] 0.2	Omaha	46.7	[1] 1.1	0.4
Chicago	64.6	[1] 0.1	0.7	Peoria	----------	[1] 1.9	0.2
Cincinnati	57.3	1.1	0.1	Philadelphia	56.9	0.4	[1] 0.8
Cleveland	53.5	0.8	[1] 0.5	Pittsburgh	51.8	[1] 1.9	0.0
Columbus	----------	[1] 2.7	[1] 1.2	Portland, Me	----------	0.8	1.6
Dallas	52.1	[1] 0.5	[1] 0.4	Portland, Oreg	39.7	0.1	1.1
Denver	40.3	0.4	0.9	Providence	54.0	0.6	1.4
Detroit	60.0	[1] 1.0	1.1	Richmond	59.0	0.5	[1] 1.4
Fall River	50.6	[1] 0.4	1.2	Rochester	----------	1.1	[1] 0.1
Houston	----------	[1] 2.5	0.0	St. Louis	55.6	[1] 0.7	[1] 0.5
Indianapolis	51.7	1.0	0.9	St. Paul	----------	[1] 0.7	0.4
Jacksonville	44.5	[1] 2.6	2.0	Salt Lake City	31.7	[1] 1.2	[1] 0.3
Kansas City	47.9	1.7	[1] 2.1	San Francisco	48.4	[1] 0.6	0.5
Little Rock	44.1	[1] 0.7	[1] 1.3	Savannah	----------	[1] 0.8	0.3
Los Angeles	39.9	0.1	1.5	Scranton	60.5	1.7	[1] 0.4
Louisville	52.8	3.8	[1] 0.7	Seattle	43.2	[1] 2.1	0.6
Manchester	54.0	1.8	2.7	Springfield, Ill	----------	[1] 0.1	0.3
Memphis	47.5	2.4	0.8	Washington, D. C	62.2	2.8	0.6
Milwaukee	55.3	0.1	0.3				

[1] Decrease.

Effort has been made by the bureau each month to have all schedules for each city included in the average prices. For the month of July 99.2 per cent of all the firms supplying retail prices in the 51 cities sent in a report promptly. The following-named 44 cities had a perfect record; that is, every merchant who is cooperating with the bureau sent in his report in time for his prices to be included in the city averages: Atlanta, Baltimore, Birmingham, Boston, Bridgeport, Charleston, S. C., Chicago, Cincinnati, Cleveland, Columbus, Dallas, Detroit, Fall River, Houston, Indianapolis, Jacksonville, Kansas City, Little Rock, Los Angeles, Louisville, Manchester,

[3] For list of articles see note 1, p. 173.
[4] The consumption figures used from January, 1913, to December, 1920, for each article in each city are given in the Labor Review for November, 1918, pp. 94 and 95. The consumption figures which have been used for each month beginning with January, 1921, are given in the Labor Review for March, 1921, p. 26.

Memphis, Milwaukee, Minneapolis, Mobile, Newark, New Haven, New Orleans, New York, Norfolk, Omaha, Peoria, Philadelphia, Pittsburgh, Portland, Me., Providence, Rochester, St. Louis, St. Paul, Salt Lake City, Savannah, Scranton, Springfield, Ill., and Washington, D. C.

The following summary shows the promptness with which the merchants responded in July, 1928:

RETAIL PRICE REPORTS RECEIVED FOR JULY, 1928

Item	United States	Geographical division				
		North Atlantic	South Atlantic	North Central	South Central	Western
Percentage of reports received	99.2	99.7	99.0	100	100	96.0
Number of cities in each section from which every report was received	44	13	7	14	8	2

Retail Prices of Coal in the United States[a]

THE following table shows the average retail prices of coal on January 15 and July 15, 1913, July 15, 1927, and June 15 and July 15, 1928, for the United States and for each of the cities from which retail food prices have been obtained. The prices quoted are for coal delivered to consumers, but do not include charges for storing the coal in cellar or coal bin where an extra handling is necessary.

In addition to the prices for Pennsylvania anthracite, prices are shown for Colorado, Arkansas, and New Mexico anthracite in those cities where these coals form any considerable portion of the sales for household use.

The prices shown for bituminous coal are averages of prices of the several kinds sold for household use.

TABLE 1.—AVERAGE RETAIL PRICES OF COAL PER TON OF 2,000 POUNDS, FOR HOUSEHOLD USE, ON JANUARY 15 AND JULY 15, 1913, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928

City, and kind of coal	1913		1927	1928	
	Jan. 15	July 15	July 15	June 15	July 15
United States:					
Pennsylvania anthracite—					
Stove—					
Average price	**$7.99**	**$7.46**	**$15.15**	**$14.89**	**$14.91**
Index (1913=100)	**103.4**	**96.6**	**196.1**	**192.7**	**192.9**
Chestnut—					
Average price	**$8.15**	**$7.68**	**$14.81**	**$14.61**	**$14.63**
Index (1913=100)	**103.0**	**97.0**	**187.1**	**184.6**	**184.9**
Bituminous—					
Average price	**$5.48**	**$5.39**	**$8.91**	**$8.72**	**$8.69**
Index (1913=100)	**100.8**	**99.2**	**163.9**	**160.4**	**159.9**
Atlanta, Ga.:					
Bituminous	$5.88	$4.83	$7.38	$7.37	$7.37
Baltimore, Md.:					
Pennsylvania anthracite—					
Stove	[1] 7.70	[1] 7.24	[1] 15.75	[1] 15.25	[1] 15.25
Chestnut	[1] 7.93	[1] 7.49	[1] 15.00	[1] 14.75	[1] 14.75
Bituminous			8.04	7.86	7.82

[1] Per ton of 2,240 pounds.

[a] Prices of coal were formerly secured semiannually and published in the March and September issues of the Labor Review. Since June, 1920, these prices have been secured and published monthly.

TABLE 1.—AVERAGE RETAIL PRICES OF COAL PER TON OF 2,000 POUNDS, FOR HOUSEHOLD USE, ON JANUARY 15 AND JULY 15, 1913, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

City, and kind of coal	1913		1927	1928	
	Jan. 15	July 15	July 15	June 15	July 15
Birmingham, Ala.:					
Bituminous	$4.22	$4.01	$7.18	$7.08	$7.05
Boston, Mass.:					
Pennsylvania anthracite—					
Stove	8.25	7.50	16.00	15.50	15.50
Chestnut	8.25	7.75	15.75	15.25	15.25
Bridgeport, Conn.:					
Pennsylvania anthracite—					
Stove	----	----	14.50	14.50	14.50
Chestnut	----	----	14.50	14.50	14.50
Buffalo, N. Y.:					
Pennsylvania anthracite—					
Stove	6.75	6.54	13.78	13.71	13.65
Chestnut	6.99	6.80	13.38	13.31	13.25
Butte, Mont.:					
Bituminous	----	----	10.94	10.87	10.87
Charleston, S. C.:					
Bituminous	[1] 6.75	[1] 6.75	11.00	11.00	11.00
Chicago, Ill.:					
Pennsylvania anthracite—					
Stove	8.00	7.80	16.70	16.25	16.25
Chestnut	8.25	8.05	16.20	15.95	15.95
Bituminous	4.97	4.65	9.09	8.30	8.35
Cincinnati, Ohio:					
Bituminous	3.50	3.38	7.06	6.44	6.44
Cleveland, Ohio:					
Pennsylvania anthracite—					
Stove	7.50	7.25	15.05	15.00	15.05
Chestnut	7.75	7.50	14.65	14.45	14.62
Bituminous	4.14	4.14	9.02	8.39	8.42
Columbus, Ohio:					
Bituminous	----	----	6.96	6.25	6.24
Dallas, Tex.:					
Arkansas anthracite—					
Egg	----	----	14.17	14.00	14.75
Bituminous	8.25	7.21	11.71	11.70	12.20
Denver, Colo.:					
Colorado anthracite—					
Furnace, 1 and 2 mixed	8.88	9.00	15.90	15.75	15.80
Stove, 3 and 5 mixed	8.50	8.50	15.90	15.75	15.80
Bituminous	5.25	4.88	9.60	9.97	10.17
Detroit, Mich.:					
Pennsylvania anthracite—					
Stove	8.00	7.45	15.50	15.50	15.50
Chestnut	8.25	7.65	15.00	15.00	15.00
Bituminous	5.20	5.20	9.18	8.99	9.13
Fall River, Mass.:					
Pennsylvania anthracite—					
Stove	8.25	7.43	16.50	16.00	16.00
Chestnut	8.25	7.61	16.00	15.75	15.75
Houston, Tex.:					
Bituminous	----	----	11.40	11.60	11.40
Indianapolis, Ind.:					
Bituminous	3.81	3.70	7.00	6.84	6.80
Jacksonville, Fla.:					
Bituminous	7.50	7.00	12.00	13.00	12.00
Kansas City, Mo.:					
Arkansas anthracite—					
Furnace	----	----	13.20	12.20	12.60
Stove No. 4	----	----	15.17	13.83	14.33
Bituminous	4.39	3.94	7.65	7.47	7.47
Little Rock, Ark.:					
Arkansas anthracite—					
Egg	----	----	14.00	13.00	12.50
Bituminous	6.00	5.33	9.85	9.65	9.10
Los Angeles, Calif.:					
Bituminous	13.52	12.50	14.75	16.50	15.00
Louisville, Ky.:					
Bituminous	4.20	4.00	6.58	6.58	6.55
Manchester, N. H.:					
Pennsylvania anthracite—					
Stove	10.00	8.50	17.00	16.50	16.75
Chestnut	10.00	8.50	16.75	16.25	16.33
Memphis, Tenn.:					
Bituminous	[2] 4.34	[2] 4.22	8.36	6.37	6.46

[1] Per ton of 2,240 pounds.

[2] Per 10-barrel lot (1,800 pounds).

TABLE 1.—AVERAGE RETAIL PRICES OF COAL PER TON OF 2,000 POUNDS, FOR HOUSEHOLD USE, ON JANUARY 15 AND JULY 15, 1913, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

City, and kind of coal	1913		1927	1928	
	Jan. 15	July 15	July 15	June 15	July 15
Milwaukee, Wis.:					
Pennsylvania anthracite—					
Stove	$8.00	$7.85	$16.40	$15.95	$15.95
Chestnut	8.25	8.10	15.95	15.65	15.65
Bituminous	6.25	5.71	9.42	9.05	9.06
Minneapolis, Minn.:					
Pennsylvania anchracite—					
Stove	9.25	9.05	17.90	17.95	17.95
Chestnut	9.50	9.30	17.45	17.65	17.65
Bituminous	5.89	5.79	11.16	11.66	11.64
Mobile, Ala.:					
Bituminous	----------	----------	9.31	9.27	9.60
Newark, N. J.:					
Pennsylvania anthracite—					
Stove	6.50	6.25	13.70	13.70	13.70
Chestnut	6.75	6.50	13.20	13.25	13.25
New Haven, Conn.:					
Pennsylvania anthracite—					
Stove	7.50	6.25	14.65	14.60	14.65
Chestnut	7.50	6.25	14.65	14.60	14.65
New Orleans, La.:					
Bituminous	[2] 6.06	[2] 6.06	9.39	9.29	9.21
New York, N. Y.:					
Pennsylvania anthracite—					
Stove	7.07	6.66	14.08	14.46	14.50
Chestnut	7.14	6.80	13.79	13.96	14.00
Norfolk, Va.:					
Pennsylvania anthracite—					
Stove	----------	----------	14.50	14.00	14.00
Chestnut	----------	----------	14.50	14.00	14.00
Bituminous	----------	----------	8.55	8.55	8.55
Omaha, Nebr.:					
Bituminous	6.63	6.13	9.68	9.10	9.10
Peoria, Ill.:					
Bituminous	----------	----------	6.97	6.82	6.52
Philadelphia, Pa.:					
Pennsylvania anthracite—					
Stove	[1] 7.16	[1] 6.89	[1] 14.96	[1] 13.82	[1] 13.96
Chestnut	[1] 7.38	[1] 7.14	[1] 14.46	[1] 13.57	[1] 13.71
Pittsburgh, Pa.:					
Pennsylvania anthracite—					
Chestnut	[1] 8.00	[1] 7.44	15.00	14.50	14.63
Bituminous	[3] 3.16	[3] 3.18	5.72	5.19	5.12
Portland, Me.:					
Pennsylvania anthracite—					
Stove	----------	----------	16.56	16.32	16.56
Chestnut	----------	----------	16.56	16.32	16.56
Portland, Oreg.:					
Bituminous	9.79	9.66	12.98	12.54	12.46
Providence, R. I.:					
Pennsylvania anthracite—					
Stove	[4] 8.25	[4] 7.50	[4] 16.00	[4] 15.50	[4] 15.50
Chestnut	[4] 8.25	[4] 7.75	[4] 15.75	[4] 15.50	[4] 15.50
Richmond, Va.:					
Pennsylvania anthracite—					
Stove	8.00	7.25	15.50	14.00	13.83
Chestnut	8.00	7.25	15.50	14.00	13.83
Bituminous	5.50	4.94	9.63	8.40	8.15
Rochester, N. Y.:					
Pennsylvania anthracite—					
Stove	----------	----------	14.35	14.35	14.29
Chestnut	----------	----------	13.90	14.00	13.94
St. Louis, Mo.:					
Pennsylvania anthracite—					
Stove	8.44	7.74	16.65	16.40	16.40
Chestnut	8.68	7.99	16.25	16.15	16.15
Bituminous	3.36	3.04	7.16	5.91	5.95
St. Paul, Minn.:					
Pennsylvania anthracite—					
Stove	9.20	9.05	17.85	17.95	17.95
Chestnut	9.45	9.30	17.45	17.65	17.65
Bituminous	6.07	6.04	11.29	11.85	11.88

[1] Per ton of 2,240 pounds.
[2] Per 10-barrel lot (1,800 pounds).
[3] Per 25-bushel lot (1,900 pounds).
[4] The average price of coal delivered in bin is 50 cents higher than here shown. Practically all coal is delivered in bin.

TABLE 1.—AVERAGE RETAIL PRICES OF COAL PER TON OF 2,000 POUNDS, FOR HOUSEHOLD USE, ON JANUARY 15 AND JULY 15, 1913, JULY 15, 1927, AND JUNE 15 AND JULY 15, 1928—Continued

City, and kind of coal	1913		1927	1928	
	Jan. 15	July 15	July 15	June 15	July 15
Salt Lake City, Utah:					
Colorado anthracite—					
Furnace, 1 and 2 mixed	$11.00	$11.50	$18.00	$18.00	$18.00
Stove, 3 and 5 mixed	11.00	11.50	18.00	18.00	18.00
Bituminous	5.64	5.46	7.29	8.56	8.48
San Francisco, Calif.:					
New Mexico anthracite—					
Cerillos egg	17.00	17.00	25.00	25.00	25.00
Colorado anthracite—					
Egg	17.00	17.00	24.50	24.50	24.50
Bituminous	12.00	12.00	15.50	16.13	16.00
Savannah, Ga.:					
Bituminous	----------	----------	[5] 10.63	[5] 10.00	[5] 9.80
Scranton, Pa.:					
Pennsylvania anthracite—					
Stove	4.25	4.31	10.48	10.28	10.28
Chestnut	4.50	4.56	10.23	10.08	10.08
Seattle, Wash.:					
Bituminous	7.63	7.70	10.07	9.66	9.63
Springfield, Ill.:					
Bituminous	----------	----------	4.44	4.44	4.44
Washington, D. C.:					
Pennsylvania anthracite—					
Stove	[1] 7.50	[1] 7.38	[1] 15.25	[1] 15.11	[1] 15.11
Chestnut	[1] 7.65	[1] 7.53	[1] 14.73	[1] 14.74	[1] 14.74
Bituminous—					
Prepared sizes, low volatile	----------	----------	[1] 10.67	[1] 10.50	[1] 10.33
Prepared sizes, high volatile	----------	----------	[1] 9.00	[1] 8.63	[1] 8.63
Run of mine, mixed	----------	----------	[1] 7.78	[1] 7.60	[1] 7.60

[1] Per ton of 2,240 pounds.
[5] All coal sold in Savannah is weighed by the city. A charge of 10 cents per ton or half ton is made. This additional charge has been included in the above price.

Index Numbers of Wholesale Prices in July, 1928

THE general level of wholesale prices in July was slightly higher than in June, according to information collected in representative markets by the Bureau of Labor Statistics of the United States Department of Labor. The bureau's weighted index number, computed on prices in 1926 as 100.0 and including 550 commodities or price series, stands at 98.3 for July compared with 97.6 for June, an increase of approximately three-fourths of 1 per cent. Compared with July, 1927, with an index number of 94.1, an increase of nearly 4½ per cent is shown.

Farm products as a group advanced about one-third of 1 per cent above the June level, due mainly to price increases for corn, calves, steers, hogs, lambs, cotton, eggs, and onions. Barley, oats, rye, and wheat, on the other hand, were cheaper than in June.

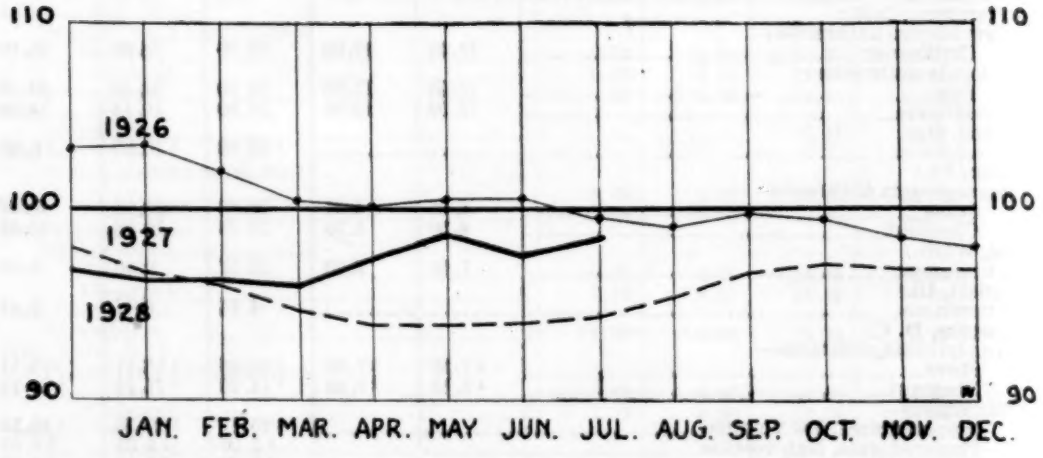
An increase of 2 per cent is shown for foods, while smaller increases are shown for hides and leather products, textile products, fuel and lighting, and building materials. Small price decreases took place in the groups of metals and metal products, chemicals and drugs, house-furnishing goods, and miscellaneous commodities.

Of the 550 commodities or price series for which comparable information for June and July was collected, increases were shown in 146 instances and decreases in 118 instances. In 286 instances no change in price was reported.

Comparing prices in July with those of a year ago, as measured by changes in the index numbers, it is seen that farm products, foods, and hides and leather products were considerably higher, while textile products, metals and metal products, and building materials were slightly higher. Small decreases are shown for fuel and lighting materials, chemicals and drugs, and house-furnishing goods, and a larger decrease for the group of miscellaneous commodities.

TREND OF WHOLESALE PRICES

[1926=100]



INDEX NUMBERS OF WHOLESALE PRICES BY GROUPS AND SUBGROUPS OF COMMODITIES

[1926=100]

Groups and subgroups	1927, July	1928, June	1928, July	Purchasing power of the 1926 dollar in July, 1928 (cents)
All commodities	**94.1**	**97.6**	**98.3**	**101.7**
Farm products	97.6	106.7	107.1	93.4
Grains	107.0	119.9	111.6	89.6
Livestock and poultry	95.3	104.7	112.1	89.2
Other farm products	95.9	103.4	102.1	97.9
Foods	93.9	100.3	102.3	97.8
Butter, cheese, and milk	97.9	99.8	103.3	96.8
Meats	90.5	104.0	112.7	88.7
Other foods	94.7	98.1	95.5	104.7
Hides and leather products	111.7	123.7	124.2	80.5
Hides and skins	133.5	155.0	155.8	64.2
Leather	113.5	127.3	128.5	77.8
Boots and shoes	103.0	110.8	110.8	90.3
Other leather products	101.6	108.4	108.6	92.1
Textile products	94.3	96.3	96.8	103.3
Cotton goods	96.1	101.1	102.0	98.0
Silk and rayon	87.4	82.6	81.7	122.4
Woolen and worsted goods	97.2	101.2	101.5	98.5
Other textile products	93.9	85.9	89.6	111.6
Fuel and lighting materials	84.2	82.1	82.8	120.8
Anthracite coal	95.2	90.3	90.5	110.5
Bituminous coal	100.0	91.8	91.4	109.4
Coke	93.7	84.7	84.6	118.2
Manufactured gas	99.6	95.2	(1)	(1)
Petroleum products	68.1	71.9	73.5	136.1
Metals and metal products	97.7	98.7	98.6	101.4
Iron and steel	95.5	94.2	94.0	106.4
Nonferrous metals	89.3	92.8	92.6	108.0
Agricultural implements	99.4	98.8	98.8	101.2
Automobiles	102.6	105.1	105.1	95.1
Other metal products	100.6	96.9	96.9	103.2

[1] Data not yet available.

INDEX NUMBERS OF WHOLESALE PRICES BY GROUPS AND SUBGROUPS OF COMMODITIES—Continued

Groups and subgroups	1927, July	1928, June	1928, July	Purchasing power of the 1926 dollar in July, 1928 (cents)
Building materials	93.7	93.9	94.4	105.9
Lumber	93.9	88.7	89.5	111.7
Brick	93.3	93.2	93.2	107.3
Cement	96.5	96.5	96.5	103.6
Structural steel	90.7	94.5	94.5	105.8
Paint materials	91.5	87.1	87.6	114.2
Other building materials	94.0	104.0	104.1	96.1
Chemicals and drugs	95.3	94.9	94.5	105.8
Chemicals	100.0	100.4	100.2	99.8
Drugs and pharmaceuticals	86.9	70.3	70.4	142.0
Fertilizer materials	93.8	94.0	93.0	107.5
Fertilizers	86.6	98.1	97.5	102.6
House-furnishing goods	98.0	97.0	96.9	103.2
Furniture	97.8	97.7	97.4	102.7
Furnishings	99.1	96.5	96.6	103.5
Miscellaneous	89.3	82.2	80.8	123.8
Cattle feed	115.4	148.8	132.4	75.5
Paper and pulp	92.0	89.2	89.2	112.1
Rubber	72.0	40.1	39.8	251.3
Automobile tires	77.9	62.2	61.6	162.3
Other miscellaneous	100.0	98.4	98.4	101.6
Raw materials	94.7	99.3	99.5	100.5
Semimanufactured articles	95.7	97.8	97.8	102.2
Finished products	93.5	96.7	97.8	102.2
Nonagricultural commodities	93.2	95.2	95.9	104.3

Wholesale Prices in the United States and in Foreign Countries, 1923 to June, 1928

IN THE following table the more important index numbers of wholesale prices in foreign countries and those of the United States Bureau of Labor Statistics have been brought together in order that the trend of prices in the several countries may be compared. The base periods here shown are those appearing in the sources from which the information has been drawn, in most cases being the year 1913. Only general comparisons can be made from these figures, since, in addition to differences in the base periods, there are important differences in the composition of the index numbers themselves.

INDEX NUMBERS OF WHOLESALE PRICES IN THE UNITED STATES AND IN CERTAIN FOREIGN COUNTRIES

Country	United States	Canada	Belgium	Bulgaria	Czechoslovakia	Denmark	Finland	France	Germany	Italy
Computing agency	Bureau of Labor Statistics (revised)	Dominion Bureau of Statistics	Ministry of Industry and Labor	Director General of Statistics	Central Bureau of Statistics (revised index)	Statistical Department	Central Bureau of Statistics	General Statistical Bureau	Federal Statistical Bureau	Riccardo Bachi (revised)
Base Period	1926	1913	April, 1914	1913	July, 1914	1913	1913	1913	1913	1913
Commodities	550	[1] 238	128	38	69	118	135	45	400	100
Year and month										
1923	100.6	153.0	497	2525	977	.....	.....	419	.....	[2] 503.9
1924	98.1	155.2	573	2823	997	.....	144	488	137.3	[2] 497.4
1925	103.5	160.3	558	.....	1008	210	147	550	141.8	[2] 612.0
1926	106.0	156.2	744	.....	955	163	142	703	134.4	[2] 618.2
1923										
January	102.2	151.4	434	2657	991	.....	.....	387	.....	516.1
April	104.0	156.9	480	2757	1012	.....	.....	415	.....	525.7
July	98.6	153.5	504	2408	949	.....	.....	407	.....	503.9
October	99.6	153.1	515	2263	960	.....	.....	421	.....	499.6
1924										
January	99.8	156.9	580	2711	974	.....	.....	494	.....	504.4
April	97.6	151.1	555	2798	1008	.....	.....	450	.....	510.3
July	95.9	153.9	566	2737	953	.....	.....	481	.....	497.4
October	98.6	157.0	555	2988	999	.....	.....	497	.....	522.0
1925										
January	103.5	165.5	559	3275	1045	243	.....	514	.....	568.2
February	104.5	164.7	551	3309	1048	240	.....	515	.....	571.1
March	104.8	161.6	546	3272	1034	236	.....	514	.....	571.2
April	102.4	156.5	538	3244	1020	230	.....	513	.....	571.1
May	102.1	158.8	537	3177	1006	227	.....	520	.....	571.2
June	103.4	158.6	552	3225	998	223	.....	543	.....	590.9
July	104.6	158.1	559	3041	1009	212	.....	557	.....	612.0
August	104.2	158.9	567	2870	993	197	.....	557	.....	630.6
September	103.7	156.2	577	2834	996	186	.....	556	.....	621.5
October	103.6	156.0	575	2823	989	179	.....	572	.....	617.1
November	104.5	161.2	569	2822	977	176	.....	605	.....	612.3
December	103.4	163.5	565	2913	977	176	.....	633	.....	613.8
1926										
January	103.6	163.8	560	2901	966	172	143	634	135.8	608.0
February	102.1	162.0	556	2899	950	165	142	636	134.3	603.5
March	100.4	160.0	583	2844	938	158	141	632	133.1	592.3
April	100.1	160.2	621	2774	923	157	141	650	132.7	590.0
May	100.5	156.8	692	2938	928	158	140	688	132.3	595.0

[1] 236 commodities since April, 1924.

[2] July.

INDEX NUMBERS OF WHOLESALE PRICES IN THE UNITED STATES AND IN CERTAIN FOREIGN COUNTRIES—Continued

Country	United States	Canada	Belgium	Bulgaria	Czechoslovakia	Denmark	Finland	France	Germany	Italy
Computing agency	Bureau of Labor Statistics (revised)	Dominion Bureau of Statistics	Ministry of Industry and Labor	Director General of Statistics	Central Bureau of Statistics (revised index)	Statistical Department	Central Bureau of Statistics	General Statistical Bureau	Fedreal Statistical Bureau	Riccardo Bachi (revised)
Base period	1926	1913	April, 1914	1913	July, 1914	1913	1913	1913	1913	1913
Commodities	550	238	128	38	69	118	135	45	400	100
Year and month										
1926—Con.										
June	100.5	155.6	761	2842	926	157	141	738	131.9	604.9
July	99.5	155.9	876	2838	948	158	141	836	133.1	618.2
August	99.0	154.0	836	2759	963	162	143	769	134.0	632.5
September	99.7	152.5	859	2723	973	162	143	787	134.9	622.0
October	99.4	151.3	856	2716	972	178	143	751	136.2	596.7
November	98.4	151.4	865	2739	978	170	143	684	137.1	594.2
December	97.9	151.5	860	2718	978	158	144	627	137.1	573.6
1927										
January	96.6	150.9	856	2706	979	157	144	622	135.9	558.2
February	95.9	150.3	854	2688	975	156	144	632	135.6	555.8
March	94.5	149.1	858	2649	976	153	143	641	135.0	544.7
April	93.7	148.9	846	2592	979	152	143	636	134.8	521.3
May	93.7	152.1	848	2751	988	152	142	628	137.1	496.2
June	93.8	153.5	851	2823	990	152	144	622	137.9	473.4
July	94.1	152.4	845	2775	992	152	144	621	137.6	466.7
August	95.2	152.7	850	2745	983	153	147	618	137.9	465.4
September	96.5	151.3	837	2736	975	153	148	600	139.7	465.4
October	97.0	152.6	839	2747	966	154	148	587	139.8	467.5
November	96.7	152.2	838	2707	967	154	149	594	140.1	466.0
December	96.8	151.8	841	2739	975	154	148	604	139.6	462.9
1928										
January	96.3	151.3	851	2782	982	153	144	607	138.7	463.5
February	96.4	150.8	848	2826	985	152	143	609	137.9	461.3
March	96.0	152.8	848	2839	978	153	144	623	138.5	463.9
April	97.4	153.2	847	2891	984	154	145	619	139.5	464.4
May	98.6	152.9	844	----------	987	155	143	632	141.2	464.9
June	97.6	150.2	844	----------	986	155	145	626	141.3	461.7

Country	Netherlands	Norway	Spain	Sweden	Switzerland	United Kingdom	Australia	New Zealand	South Africa	Japan	China	India
Computing agency	Central Bureau of Statistics	Central Bureau of Statistics	Institute of Geography and Statistics	Chamber of Commerce	Federal Labor Department	Board of Trade	Bureau of Census and Statistics	Census and Statistics Office (revised)	Office of Census and Statistics	Bank of Japan, Tokyo	Bureau of Markets, Treasury Department, Shanghai	Labor Office Bombay
Base period	1913	1913	1913	1913	July, 1914	1913	July, 1914	1913	1913	1913	1913	July, 1914
Commodities	[3] 48	174	74	160	78	150	92	180	187	56	[4] 117	42
Year and month												
1923	151	232	172	163	-------	158.9	170	158	127	199	156.4	181
1924	156	267	183	162	-------	166.2	165	165	129	206	153.9	182
1925	155	253	188	161	-------	159.1	162	161	128	202	159.4	163
1926	145	198	181	149	145	148.1	161	155	123	179	164.1	149

[3] 52 commodities in 1920; 53 commodities from August, 1920, to December, 1921. [4] 147 items.

INDEX NUMBERS OF WHOLESALE PRICES IN THE UNITED STATES AND IN CERTAIN FOREIGN COUNTRIES—Continued

Country	Netherlands	Norway	Spain	Sweden	Switzerland	United Kingdom	Australia	New Zealand	South Africa	Japan	China	India
Computing agency	Central Bureau of Statistics	Central Bureau of Statistics	Institute of Geography and Statistics	Chamber of Commerce	Federal Labor Department	Board of Trade	Bureau of Census and Statistics	Census and Statistics Office (revised)	Office of Census and Statistics	Bank of Japan, Tokyo	Bureau of Markets, Treasury Department, Shanghai	Labor Office, Bombay
Base period	1913	1913	1913	1913	July, 1914	1913	July, 1914	1913	1913	1913	1913	July, 1914
Commodities	48	174	74	160	78	150	92	180	187	56	117	42
Year and month												
1923												
January	157	223	170	163	-------	157.0	163	-------	131	184	152.7	181
April	156	229	174	168	-------	162.0	167	-------	126	196	157.7	180
July	145	231	170	162	-------	156.5	180	-------	124	192	155.4	178
October	148	235	171	161	-------	158.1	171	-------	125	212	156.1	181
1924												
January	156	251	178	161	-------	165.4	174	-------	131	211	155.8	188
April	154	263	184	161	-------	164.7	166	-------	126	207	153.7	184
July	151	265	182	157	-------	162.6	163	-------	125	195	151.5	184
October	161	273	186	167	-------	170.0	163	-------	133	213	152.8	181
1925												
January	160	279	191	169	-------	171.1	163	166	130	214	159.9	173
February	158	281	192	169	-------	168.9	162	162	-------	210	159.2	173
March	155	279	193	168	-------	166.3	160	162	-------	204	160.3	171
April	151	273	190	163	-------	161.9	158	162	130	202	159.3	165
May	151	262	191	162	-------	158.6	159	162	-------	199	157.8	164
June	158	260	187	161	-------	157.2	162	162	-------	200	157.3	160
July	155	254	188	161	-------	156.9	162	161	127	198	162.8	158
August	155	249	184	159	-------	156.2	162	161	-------	200	160.3	160
September	155	237	185	157	-------	155.1	162	160	-------	201	160.2	157
October	154	223	187	154	-------	153.9	163	162	124	200	159.0	158
November	154	220	186	155	-------	152.7	165	161	-------	198	158.4	160
December	155	220	187	156	-------	152.1	160	160	-------	194	158.1	154
1926												
January	153	214	186	153	153	151.3	161	159	124	192	164.0	154
February	149	211	186	152	147	148.8	160	159	-------	188	163.0	151
March	145	205	183	149	146	144.4	163	157	-------	184	164.4	150
April	143	199	179	150	145	143.6	168	156	120	181	162.8	151
May	143	197	179	151	143	144.9	167	156	-------	177	169.7	151
June	144	194	177	150	143	146.4	163	155	-------	177	155.8	150
July	141	192	178	148	145	148.7	162	156	122	179	156.9	149
August	139	193	180	147	142	149.1	162	154	-------	177	160.5	148
September	140	193	178	146	142	150.9	158	153	-------	176	164.2	149
October	143	198	179	148	144	152.1	154	153	127	174	171.1	147
November	147	199	185	148	142	152.4	155	151.	-------	171	174.4	146
December	147	184	186	150	142	146.1	155	153	-------	170	172.0	146
1927												
January	145	174	184	146	141	143.6	154	151	128	170	172.8	146
February	146	172	180	146	141	142.6	153	147	-------	171	172.0	148
March	144	167	179	145	141	140.6	150	147	-------	171	174.7	146
April	143	164	177	143	140	139.8	151	147	126	170	173.1	145
May	145	162	172	145	141	141.1	152	145	-------	171	171.3	146
June	149	166	171	146	140	141.8	155	146	-------	172	169.3	147
July	151	165	168	146	140	141.1	161	146	120	170	171.0	147
August	149	167	168	146	146	140.9	165	146	-------	167	170.8	148
September	150	167	169	148	144	142.1	170	146	-------	169	171.8	148
October	150	165	169	147	145	141.4	173	146	122	170	168.7	146
November	151	166	168	148	147	141.1	166	147	-------	168	165.8	144
December	151	166	169	148	146	140.4	162	148	-------	168	163.5	143
1928												
January	153	164	166	148	145	141.1	163	150	123	169	163.1	141
February	150	163	166	147	144	140.3	160	147	-------	169	164.3	142
March	152	164	165	149	145	140.8	160	148	-------	169	163.4	140
April	153	162	166	151	146	142.9	162	147	121	170	163.1	142
May	152	162	164	152	145	143.6	159	148	-------	171	164.5	145
June	153	161	-------	151	145	142.6	159	-------	-------	169	-------	-------

IMMIGRATION AND EMIGRATION

Statistics of Immigration for June, 1928

By J. J. KUNNA, CHIEF STATISTICIAN, UNITED STATES BUREAU OF IMMIGRATION

THE statistics for June, 1928, show 20,419 immigrants and 17,786 nonimmigrants, a total of 38,205 aliens, admitted to the United States. In the same month 27,199 aliens left the country, 7,205 being emigrants and 19,994 nonemigrants.

In the fiscal year ended June 30, 1928, the peak month of immigration was September when 56,619 aliens entered the country, and the low month was January with 26,725, while 47,719 was the monthly average for the year. In the preceding fiscal year aliens were admitted at the rate of 44,833 a month.

The total number of alien arrivals during the past fiscal year was 519,470. After examination, 18,839 of these were found inadmissible for various causes under the immigration laws and were accordingly debarred from entering the country. The number of admissions for the year was, therefore, 500,631 as against 538,001 in the previous year, 496,106 in 1926, and 458,435 in 1925. Of the total number of aliens admitted during the past year 193,376 were nonimmigrants (i. e., returning from a temporary sojourn abroad or coming here for a short visit). Our true immigration for the year was, therefore, 307,255 as compared with 335,175 for the previous year, a decrease of 27,920.

Of the 307,255 immigrants admitted last year, over one-half came from European countries, Germany with 45,778 contributing by far the largest number from overseas—more than that from any other two countries on that Continent. The Irish Free State sent 24,544 immigrants during the year, the next largest number coming from abroad, while Great Britain contributed 19,958, Italy 17,728, the Scandinavian countries (Denmark, Norway, and Sweden) 16,184, Poland 8,755, France 4,438, Czechoslovakia 3,571, and Greece 2,328. The total immigrants coming from Europe during 1928 numbered 158,513, a drop of 9,855 from the corresponding figure for the year preceding. Immigration from Canada and Mexico also declined during the past year, the number of immigrants from these two sources decreasing, respectively, from 81,506 and 67,721 in the fiscal year 1927 to 73,154 and 59,016 in the year just closed.

The major portion of the new arrivals continue to settle in the eastern section of the country. Of the 307,255 immigrants entering the country last year, 156,658 settled in the North Atlantic States, 5,023 in the South Atlantic, 67,741 in the North Central, 38,697 in the South Central, and 39,136 in the Western States and outlying possessions. Massachusetts, the most prominent of the New England States in the destination of immigrants, received 20,461 new arrivals

during the year. New York State, always the settling ground for the largest number of newcomers, received 87,503, or over one-fourth of the total immigrants for the year. In the North Atlantic division, Michigan attracted 25,872 immigrants last year, Illinois 19,165, and Ohio 8,292. Over four-fifths (83.9 per cent), or 36,698 of the immigrants destined to the States in the two southern divisions, gave Texas as their intended future permanent residence; the vast majority of these were Mexicans coming in over the southern land border.

The men continue to outnumber the women among the new arrivals. In the past fiscal year 165,977 of the immigrants were males and 141,278 females; and less than one-sixth of the total were children, 49,680 being under the age of 16 years, while 73,092 ranged from 16 to 21 years, 95,727 from 21 to 29 years, 42,642 from 30 to 37 years, 19,371 from 38 to 44 years, and 26,743 from 45 to 55 years and over. The single immigrants numbered 196,249, married 100,994, widowed 9,362, and divorced 650. Corresponding figures for the preceding year were as follows: 194,163 male and 141,012 female; 51,689 under 16 years of age, 77,636 from 16 to 21 years, 105,351 from 22 to 29 years, 49,292 from 30 to 37 years, 22,295 from 38 to 44 years, and 28,912 were 45 years of age and over; 211,744 were single, 112,674 married, 10,137 widowed, and 620 divorced.

The race or nationality of the immigrants for the past fiscal year was as follows: Mexican (57,765), German (54,157), Irish (38,193), English (33,597), Scotch (23,177), Italian (18,740), Scandinavian (18,664), French (17,963), and Hebrew (11,639). Newcomers of the classes ineligible to citizenship admitted during the same period included 931 Chinese, 38 East Indians, 522 Japanese, 22 Koreans, and 2 Pacific Islanders, a total of 1,515.

The unskilled workers comprise the largest group among the wage-earning immigrants admitted last year, 36,218 giving their occupation as that of common laborer and 24,161 as farm laborer. Immigrants in skilled occupations, numbering 58,928, rank second among those having an occupational status and servants, with 28,751, are third in number. There were 10,931 aliens in the professional class and 14,401 in the mercantile and the miscellaneous classes. Immigrants listed as having no occupation, being mostly women and children, numbered 125,092, or 40.7 per cent of the total for the year.

During the fiscal year just ended 77,457 emigrant aliens left the United States to make their future homes abroad. The largest number, 57,185, or 73.8 per cent, went to European countries, Italy being the destination of 17,324, Germany of 6,645, England of 6,039, the Scandinavian countries of 3,508, and Poland of 3,071. Other countries receiving over 3 per cent each of the emigrants last year were China (4,364), the West Indies (4,244), Mexico (3,957), Canada (2,529), and Greece (2,461). Over one-half of the wage-earners among the emigrants leaving the United States last year gave their occupation as that of common laborer, 29,396, approximately the same number as for the previous year, being of this class. A much larger proportion of the immigrants than the emigrants for the year are farm laborers. This no doubt is accounted for chiefly by the fact that most aliens rated as farm laborers when they come to the United States engage in other pursuits in this country.

The outward movement of aliens is largely one of males, the men outnumbering the women by about 5 to 2. Of the emigrants leaving the country last year 54,786 were males and 22,671 females; 56,118 were in the middle age group from 16 to 44 years; and 17,839 were 45 years of age and over, while only 3,500 were children under 16 years of age. The number of married emigrants was 43,884, single 31,147, widowed 2,362, and divorced 64.

During the fiscal year ended June 30, 1928, 13,286 males and 5,553 females, a total of 18,839 aliens, were denied admission to the United States. Over four-fifths of the aliens debarred were turned back at points along the international land borders, 13,600 to Canada and 2,805 to Mexico. Of the others, 1,140 were rejected at New York, 470 at ports on the Pacific coast, 260 at Gulf of Mexico ports, and 564 at the other seaports. The number of aliens debarred last year on account of failure to present proper immigration visas is considerably larger than for all other classes, reaching a total of 17,885. The principal races among the debarred were the English (3,390), Mexican (2,595), Scotch (1,647), French (1,622), Irish (1,590), and German (1,297). The number of aliens deported from the United States during the year under warrant proceedings was 11,625, a slight decrease as compared with the previous year, when 11,662 undesirable aliens were deported. Entering without visa was the cause for deporting nearly half of the number last year, and the Mexican and the English races were the only ones with over a thousand of the deportees. Of the 11,625 deportees, 5,021 were sent to European countries, 2,934 to Mexico, 2,511 to Canada, and 1,159 to the other countries.

The number of American citizens leaving the United States during the fiscal year ended June 30, 1928, was 429,575, and practically the same number (430,955) returned, an increase over the previous year when 369,788 citizens departed and 378,520 arrived. New York, by far the principal port of embarkation for Americans going abroad, most of whom are of the tourist class visiting Europe, reported 299,272 citizen arrivals and 300,669 citizen departures, or nearly 70 per cent of the total for the past year. The port with the next largest but much smaller number of citizens arriving during the same period was Key West, Fla., where 44,645 citizens landed, coming mostly from the West Indies.

As to the character and business of the 500,631 aliens admitted to the United States during the past fiscal year, 153,231 came in under the immigration act of 1924 as immigrants charged to the quota, 123,362 as natives of nonquota countries, principally Canada and Mexico, and 94,502 as residents of the United States returning from a visit abroad. Visitors for business or pleasure numbered 64,581, and persons passing through the country on their way elsewhere 27,257. Other admissions during the year included 25,700 wives and children of American citizens; 6,348 Government officials, their families, attendants, servants, and employees; 1,446 aliens to carry on trade; 1,404 ministers and professors and their wives and children; 1,816 students; and 984 aliens of the miscellaneous classes.

INWARD AND OUTWARD PASSENGER MOVEMENT FROM JULY 1, 1927, TO JUNE 30, 1928

Period	Inward					Aliens debarred from entering [1]	Outward					Aliens deported after landing [2]
	Aliens admitted			United States citizens arrived	Total		Aliens departed			United States citizens departed	Total	
	Immigrant	Non-immigrant	Total				Emigrant	Non-emigrant	Total			
1927												
July	23,420	15,973	39,393	29,935	69,328	2,002	9,230	18,509	27,739	65,686	93,425	700
August	28,418	19,011	47,429	57,701	105,130	1,574	6,322	17,014	23,336	43,039	66,375	1,346
September	31,000	25,619	56,619	75,557	132,176	1,600	7,625	16,885	24,510	39,748	64,258	901
October	31,719	21,578	53,297	50,254	103,551	1,567	6,402	16,424	22,826	24,396	47,222	932
November	27,758	13,841	41,599	24,325	65,924	1,723	5,871	16,886	22,757	22,612	45,369	1,030
December	22,350	10,452	32,802	18,922	51,724	1,679	9,085	21,418	30,503	25,209	55,712	999
1928												
January	18,146	8,579	26,725	19,909	46,634	1,348	5,323	15,632	20,955	27,126	48,081	808
February	20,888	10,393	31,281	31,941	63,222	1,390	4,708	10,070	14,778	34,810	49,588	933
March	26,270	14,348	40,618	34,217	74,835	1,569	4,931	12,242	17,173	29,422	46,595	950
April	30,709	17,982	48,691	32,586	81,277	1,346	4,515	12,553	17,068	29,506	46,574	951
May	26,158	17,814	43,972	28,407	72,379	1,601	6,240	19,272	25,512	34,993	60,505	766
June	20,419	17,786	38,205	27,201	65,406	1,440	7,205	19,994	27,199	53,028	80,227	1,309
Total	307,255	193,376	500,631	430,955	931,586	18,839	77,457	196,899	274,356	429,575	703,931	11,625

[1] These aliens are not included among arrivals, as they were not permitted to enter the United States.
[2] These aliens are included among aliens departed, they having entered the United States, legally or illegally, and later being deported.

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Compiled by LAURA A. THOMPSON, LIBRARIAN, U. S. DEPARTMENT OF LABOR

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The American Constitution as it Protects Private Rights . . . New York, C. Scribner's Sons, 1923. 239 pp.

Chapter III includes brief discussion on Government by injunction. The conclusions reached are (1) That an injunction should not be made an instrument for the preventing or the punishing of crime; (2) that punishments for contempt of an injunctive order should be carefully inflicted, after hearing both sides, and be lighter than the punishment of the criminal law; and (3) that the appearance of the Government in a suit is always open to many objections. When national interests are involved he regards it as far better for the Government to interfere by direct action. "Government should not descend to parley with either employers or employees as if it were an equal contracting power only, but hold itself sternly above both and insist on the law of the land."

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See also article by same author in issue of Oct. 2, 1922, p. 319, entitled "Pending issues of the railroad strike."

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What do the courts intend? Are they bent on destroying organized labor?
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In reviewing the use of injunctions to break up the Industrial Workers of the World this author reaches two conclusions: (1) That it is a grave mistake to allow prosecuting officials to employ courts of equity in place of criminal courts instead of reforming the administration of criminal justice, and (2) that the efficiency of the governmental injunction in maintaining the normal processes of life during industrial disputes does not necessarily make it desirable, as this efficiency may be bought at an undue sacrifice of freedom.

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American Bar Association Journal, December, 1925, v. 11, pp. 815–817.
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Shop Review (National Founders Association) August, 1928, v. 25, pp. 283–287.
Includes criticism of the Shipstead anti-injunction bill.

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Monthly Labor Review, October, 1922, v. 15, pp. 891–897.
Cases cited of labor seeking injunctive relief in the courts and decisions thereon. *See also* Monthly Labor Review for June, 1921, v. 12, pp. 1237–1239; April, 1922, v. 14, pp. 818, 819 (injunctions against employers breaking contract, Michigan and New York).

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Law and Labor, December, 1919, v. 1, No. 12, pp. 2–14.
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Tendencies in trade-union development in the United States.
International Labor Review, June, 1922, v. 5, pp. 855–887.
"Organized labor and the law," pp. 875–878.

CONFERENCE OF REPRESENTATIVES OF NATIONAL TRADE-UNIONS, *Washington, D. C.*
The challenge accepted. Labor will not be outlawed or enslaved.
American Federationist, April, 1921, v. 28, pp. 289–301.
Statement issued by the conference of trade-union representatives to discuss decisions of the United States Supreme Court affecting the trade-union movement, particularly the decision in Duplex Printing Co. case.

COOK, WALTER WHEELER.
Privileges of labor unions in the struggle for life.
Yale Law Journal, April, 1918, v. 27, pp. 779–801.
Discussion of the case of Hitchman Coal & Coke Co. *v.* Mitchell. Regards the real point at issue as dealt with inadequately in the majority opinion and suggests that the policy of the decision must be reexamined before it can be accepted as sound law.

COOPER, LYLE W.
The injunction and jury trial.
American Federationist, August, 1928, v. 35, pp. 950–959.
Case reviewed is that involving union knitters formerly employed by the Allen A. Hosiery Co. at Kenosha, Wis., in Federal District Court, Milwaukee, April, 1928, the first occasion in the United States that a jury was called upon to decide whether contempt actually had been committed. After an analysis of the elements which entered into the situation the author reaches the conclusion that, though there was acquittal in this case, labor leaders should not be lulled into a sense of relative security on the theory that "juries won't convict" but that from the point of view of organized labor the case against the injunction remains as strong as ever.

THE COURTS AND THE COAL STRIKE.
Nation, Dec. 20, 1919, v. 109, p. 787.
See also Editorials "The coal war" in issue of Nov. 8, 1919, pp. 577, 578, and "The surrender at Indianapolis" in issue of Nov. 15, 1919, p. 630.

DAUGHERTY DECLARES WAR.
New Republic, Sept. 13, 1922, v. 32, pp. 57, 58.

Editorial declares that "The temporary injunction against the railway shopmen secured by Mr. Daugherty abandons all pretence of governmental impartiality. Its plain object is, not to suppress unlawful acts attendant upon the strike, but to break the strike itself."

DECISIONS AGAINST THE "YELLOW DOG."
New Republic, Feb. 29, 1928, v. 54, pp. 58–60.

DECLARATION OF ORGANIZED LABOR'S POSITION ON INJUNCTIONS. Adopted at the Washington conference, February 7, 1928.
International Molders' Journal, March, 1928, v. 64, pp. 133–135.

DE SILVER, ALBERT.
The injunction—a weapon of industrial power.
Nation, Jan. 25, 1922, v. 114, pp. 89–91.

After reviewing the use of injunctions, particularly in connection with the United Mine Workers, the author reaches the conclusion that "The injunction, if it continues to be used in labor disputes as it is now being used, will destroy what little semblance of equality there may be and, if it brings peace in industry at all, will bring only a dictated peace—a mere truce filled with bitterness and dissension while the contending forces prepare for the next test of power."

DISNEY, ORLANDO.
Hog-tying the judiciary.
Manufacturers' News, Mar. 21, 1925, v. 27, pp. 368, 382, 383.

The three arguments advanced against the Illinois anti-injunction bill are: (1) That it is an attempt to invade and limit the jurisdiction of the courts of equity; (2) that it is a flagrant attempt at class legislation; and (3) that it is an attempt to so define property as to deprive the owners of a vast amount and variety of property of the equal protection of the laws.

THE DUTY OF CIVIL DISOBEDIENCE.
Nation, Nov. 16, 1921, v. 113, p. 560.

Editorial on Judge Anderson's injunction against the United Mine Workers restraining them from organizing the West Virginia coal fields. *See also* editorial in New Republic, Nov. 23, 1921, v. 28, pp. 365, 366.

EMERY, JAMES A.
Anti-injunction bill in New Jersey.
American Industries, April, 1913, v. 13, pp. 9–11.

—— Anti-injunction bill, reversion towards barbarism.
National Association of Manufacturers, Pocket Bulletin, March, 1928, pp. 5–10.

In opposition to proposed Federal legislation.

—— Efforts to break injunction power revolutionary, unnecessary.
Pennsylvania Manufacturers' Journal, January, 1928, p. 5.

—— The menace of lessened State control of labor combinations.
Monitor, April, 1928, v. 14, pp. 199–201.

Argument before New York State Industrial Commission in opposition to proposed anti-injunction legislation in New York (Byrne Bill).
See also testimony before United States Senate Committee on the Judiciary, 1928 (p. 219 of this list) and speech at annual dinner of League for Industrial Rights, 1928, in Law and Labor, April, 1928, pp. 90–94, in opposition to proposed Federal legislation.

ENJOINING THE CHECK-OFF SYSTEM OF THE UNITED MINE WORKERS.
Monthly Labor Review, February, 1922, v. 14, pp. 368–371.

FISHER, MORTON P.
Ground for issuance of injunctions by the United States courts in trade disputes between employers and employees.
Chicago Legal News, July 1, 1920, v. 52, p. 386–388, 390–392.

FOLLY OF GOVERNMENT BY INJUNCTION.
New Republic, Dec. 10, 1919, v. 21, pp. 43, 44.

A review of the situation in the coal strike.

FRANKFURTER, FELIX AND JAMES M. LANDIS.
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—— Judicially-created class distinctions.
American Federationist, September, 1921, v. 28, pp. 730–736.

—— Thou shalt not; an equity court restrained.
American Federationist, May, 1927, v. 34, pp. 553–557.
Injunction case in an appellate court in Ohio involving the authority and jurisdiction of an equity court and the legal standing of an arbitration clause in an agreement between employers and trade unionists.

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Strike of the railroad shopmen.
Monthly Labor Review, December, 1922, v. 15, pp. 1171–1191.
Includes brief discussion of the Federal injunction obtained by Attorney General Daugherty.

GOMPERS, SAMUEL.
The courts and Mr. Taft on labor.
American Federationist, March, 1921, v. 28, pp. 220–225.
A reply to article by William H. Taft in Philadelphia Public Ledger, January 12, 1921, criticizing statement of Mr. Gompers on the Supreme Court decision in the Duplex Printing Co. case. Reprints text of Mr. Taft's article.

—— Labor must resist judicial tyranny.
American Federationist, October, 1923, v. 30, pp. 802–806.
Address delivered in Chicago, August 16, 1923, before a meeting called by the representatives of labor in Chicago for the purpose of considering the injunction issued by Federal Judge Carpenter against International Ladies' Garment Workers' Union.

—— A legalistic anesthetic.
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Editorial on the injunction secured by the International Ladies' Garment Workers' Union in New York against the Association of Employers in the Cloak, Suit and Skirt Industry.
See also cartoon by Baer in same issue, p. 112.

—— Rights judicially purloined.
American Federationist, February, 1921, v. 28, pp. 135, 136.
Editorial on the Supreme Court decision in the Duplex Printing Co. case. "The purpose of the Clayton Act was to make impossible a continuance of the curtailment of liberties by a reactionary court. By power it has usurped the court has taken the meaning out of an act of Congress, and in that process it has gone so far as to abrogate provisions intended purposely to limit the scope of the court's action in the curtailment of human freedom."

—— The Supreme Court at it again.
American Federationist, January, 1922, v. 29, pp. 44–48.
Editorial on the Supreme Court decisions in American Foundries Co. *v.* Tri-City Trades Council and Truax *v.* Corrigan.

—— Tyranny must be balked at any cost.
American Federationist, October, 1922, v. 29, pp. 766–771.
Editorial on the injunction secured by Attorney General Daugherty in the railway shopmen's strike. Includes text of official statement issued by the executive council of the American Federation of Labor.

GOVERNMENT BY DAUGHERTY.
Nation, Sept. 13, 1922, v. 115, p. 243.
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Congressional Record, Jan. 23, 1928, v. 69, pp. 1846, 1847.
Address before Chicago Bar Association, Chicago, January 13, 1928. Also in International Molders Journal, February, 1928, v. 64, pp. 70–74; Quarry Workers Journal, February, 1928, p. 3.

—— In conformity with the law.
American Federationist, May, 1926, v. 33, pp. 533, 534.

—— Labor injunction opposed and defended.
Law and Labor, September, 1927, v. 9, pp. 239–242.
Debate between William Green, president of the American Federation of Labor, and Walter G. Merritt, associate counsel of League for Industrial Rights, as reported in the New York Times, August 28, 1927.

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Shipstead to lead fight on injunctions. Farmer-Labor senator introduces one of shortest bills on record to curb legal restrictions of labor's rights.
Locomotive Engineers Journal, February, 1928, v. 62, pp. 91, 155, 156.

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The use of injunctions in industrial disputes in Canada.
Railway Maintenance of Way Employees Journal, May, 1925, v. 34 No. 5, pp. 3, 4.
Also in Brotherhood of Locomotive Firemen and Enginemen's Magazine, May, 1925, v. 78, pp. 331, 332.

HAYS, ARTHUR GARFIELD.
Use this weapon [injunctions].
Labor Age, July, 1926, v. 15, No. 7, pp. 15, 16.

HUNT, HENRY T.
Labor's new offensive against injunctions.
Railway Clerk, February, 1926, v. 25, pp. 46, 64.

ILLINOIS ANTI-INJUNCTION STATUTE HELD UNCONSTITUTIONAL.
Law and Labor, January, 1926, v. 8, No. 1, pp. 5–7.
Case of Isidore Ossey *v.* Retail Clerks Union (Superior Court, Cook County, Ill., November 28, 1925).

INJUNCTION AGAINST STRIKE TO SECURE UNIONIZATION.
Monthly Labor Review, September, 1920, v. 11, pp. 574–577.
Article includes excerpts from the decision of Judge Rodenbeck of New York Supreme Court in case of Michaels, Stern & Co. *v.* Amalgamated Clothing Workers of America.

INJUNCTION AGAINST STRIKING SHOP CRAFT UNIONS.
Commercial and Financial Chronicle, Sept. 2–30, 1922, v. 115, pp. 1050, 1165–1173, 1279–1282, 1393, 1394, 1495–1497.
See also excerpts from Attorney General Daugherty's speech in defense of the injunction in issue of October 28, 1922, pp. 1907–1910.

INJUNCTION AGAINST THE MINERS.
New Republic, Nov. 12, 1919, v. 20, pp. 307, 308.
See also editorials in Independent, Nov. 15, 1919, v. 100, pp. 86–89; in Public, Nov. 29, 1919, v. 22, pp. 1106, 1107.

INJUNCTION AGAINST MASS PICKETING.
Monthly Labor Review, November, 1920, v. 11, pp. 1068, 1069.
Langenberg Hat Co. *v.* United Cloth Hat and Cap Workers of North America, 266 Fed. 127.

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Monthly Labor Review, October, 1922, v. 15, pp. 888–890.

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Law and Labor, May, 1924, v. 6, pp. 115–117.
"Discussion of the growing popularity of the injunction as a remedy in all fields of litigation, and the misrepresentation of its use in labor disputes."

THE INJUNCTION IN THE SHOP EMPLOYEES' STRIKE.
Railway Age, Sept. 9, 1922, v. 73, p. 453.

See also article in same number (pp. 469, 470) entitled "United States gets blanket injunction against shopmen." For articles on later legal proceedings *see* same journal, September 16–October 28, 1922, pp. 507–509, 560, 611, 612, 718, 768, 816.

INJUNCTIONS AGAINST EMPLOYERS BREACHING CONTRACT, NEW YORK.
Monthly Labor Review, April, 1922, v. 14, pp. 818, 819.

INJUNCTIONS AGAINST PICKETING.
Monthly Labor Review, December, 1921, v. 13, pp. 1321, 1322.

INJUNCTIONS AND CONTEMPT OF COURT.
New Republic, Nov. 19, 1924, v. 40, pp. 287–289.

Editorial reviewing the decision of the Supreme Court sustaining the requirements of the Clayton Act for jury trials in criminal contempts. Urges reform in the use of injunctions in labor disputes. *See also* editorial in the Nation, Nov. 5, 1924, p. 485, entitled "A jolt for the judges"; and quotations from daily press in Literary Digest, Nov. 8, 1924, p. 12.

INJUNCTIONS AS AFFECTED BY THE CLAYTON ACT.
Monthly Labor Review, October, 1920, v. 11, pp. 829–831.

INJUNCTIONS BY WHOLESALE.
Outlook, Feb. 29, 1928, v. 148, pp. 327, 328.

INJUNCTIONS IN THE BUILDING TRADES.
Monthly Labor Review, April, 1922, v. 14, pp. 812–818.

INTERNATIONAL ASSOCIATION OF MACHINISTS.
Report of international president William H. Johnston to the . . . seventeenth convention.
Machinists' Monthly Journal, October, 1924, v. 36, pp. 450–496, 527, 528.

"Injunctions", pp. 454–461.

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Legality of peaceful picketing.
Cornell Law Quarterly, February, 1927, v. 12, pp. 226–229.

THE LABOR INJUNCTION.
Social Service Bulletin (Methodist Federation for Social Service, New York), March 1, 1928, v. 18, No. 5.

LABOR INJUNCTIONS GROWING DANGEROUS.
American Labor World, August, 1924, v. 25, No. 8, pp. 3, 4.

LABOR INJUNCTION RESTS ON UNTRUTH AND DECEIT.
Plumbers, Gas and Steam Fitters' Journal, August, 1924, pp. 10, 11.

LABOR INJUNCTIONS MUST GO.
New Republic, Sept. 27, 1922, v. 32, No. 408, pp. 109, 110.

Includes quotations from the press condemning the injunction granted to Attorney General Daugherty in the shop crafts strike. View expressed is that "as an adjuster of industrial conflict the injunction has been an utter failure. It has been used as a short cut—but it has not cut anything, except cut off labor from confidence in the rule of law and of the courts, as its impartial organs."

THE LABOR PRESS [ON INJUNCTIONS].
Survey, Jan. 14, 1922, v. 47, p. 597.

LANDIS, JAMES M.
Labor's new day in court. The Supreme Court vindicates jury trial in contempt cases.
Survey, Nov. 15, 1924, v. 53, pp. 175–177.

Decision of Supreme Court in Michaelson *v.* United States construing the validity of the provisions of the Clayton Act relating to jury trial in contempt cases.

A LAW AGAINST INJUNCTIONS?
New Republic, Feb. 22, 1928, v. 54, pp. 7, 8.

Regards Senate bill 1482, sponsored by the American Federation of Labor, introduced by Senator Shipstead which seeks to limit the jurisdiction of the courts sitting in equity as practically certain to be declared unconstitutional if passed, and even if valid as an ineffective and undesirable way of trying to get rid of the grievances which organized labor suffers from the present use of the injunction. What labor needs for its protection is a bill which enumerates and condemns the specific evils in the present use of the injunction from the standpoint of both judicial practice and substantive law.

LOWELL, ESTHER.
A. F. of L. *v.* I. R. T. Labor rises to the challenge.
Labor Age, December, 1927, v. 16, No. 12, pp. 3, 4.

MACHINE-GUN LEGISLATION.
Survey, Mar. 15, 1928, v. 59, pp. 752, 753.

Editorial in which the Shipstead bill which would bar Federal courts issuing injunctions to protect property unless it is "tangible and transferable" is described as "an unfortunate instance of misguided zeal in a good cause." Suggests, as other lines of approach to the problem, a provision that temporary injunctions in labor cases should be dissolved or made permanent on hearing within 48 hours and that appeal in such cases should be given absolute preference and heard within 2 weeks. Suggests also that "it is possible to codify and legalize expressly the standard purposes of strikes and the standard ways of conducting strikes."

MAGUIRE, JOHN W. R.
Industrial problems and the law.
(*In* Catholic Conference on Industrial Problems. 2d annual meeting, May 27–28, 1924, pp. 29–33.)

Relates mainly to the use of injunctions in labor disputes.

—— The struggle towards liberty.
Illinois State Federation of Labor Weekly News Letter, Jan. 28, 1928, v. 13, No. 44, pp. 3, 4.

Second lecture in the series on injunctions broadcast from Radio Station WCFL, Chicago. *See also* lecture by S. J. Konenkamp in same issue, page 1.

MASON, ALPHEUS T.
The labor clauses of the Clayton Act.
American Political Science Review, August, 1924, v. 18, pp. 489–512.

—— Legal justification for injunctions in labor disputes.
South Atlantic Quarterly, January, 1924, v. 23, pp. 40–49.

MASSACHUSETTS TAKES THE LEAD.
New Republic, Apr. 13, 1921, v. 26, pp. 171–173.

Injunction granted the United Shoe Machinery Corporation by the Supreme Judicial Court of Massachusetts.

MEYER, MAX.
The garment strike.
New Republic, Nov. 17, 1926, v. 48, p. 379.

Letter from the secretary of the Industrial Council defending the use of the injunction in the coat and suit strike in New York (In answer to editorial in New Republic, Oct. 13, 1926, p. 205).

MITCHELL, ROBERT.
Injunction, "yellow dog contract," company union, the unholy trinity in traction.
Daily Worker, Dec. 15–17, 19, 21, 24, 27, 28, 1927.

MONAGHAN, GEORGE F.
Injunctions in labor disputes.
American Employer, May, 1914, v. 2, pp. 601–608.

MONTGOMERY, ROYAL E.
The Clayton law: labor provisions and the Supreme Court.
University Journal of Business, February, 1923, pp. 1–32.

MOTE, C. H.
Some phases of injunction legislation, 1913–1914.
American Political Science Review, February, 1915, v. 9, pp. 93–97.

MUNZ, C. CURTIS.
The injunction proves a boomerang.
Brotherhood of Locomotive Firemen and Enginemen's Magazine, March 1928, v. 84, pp. 195–197.

On the injunction restraining officials of the Texas & New Orleans Railway from interfering with or coercing employees in the formation of their organizations.

NELLES, WALTER.
A limit on labor injunctions?
Survey, May 15, 1925, v. 54, pp. 247, 248.

An analysis of the Illinois bill limiting injunctions. Summary of bill also in American Labor Legislation Review, September, 1925, v. 15, pp. 233, 234.

O'HANLON, JOHN MARTIN.
Why we need a law regulating issuing of court injunctions.
American Labor World, February, v. 28, No. 2, pp. 16, 17.

OLANDER, VICTOR A.
Equality before the law—a messenger from labor.
Shoe Workers' Journal, March, 1921, pp. 3, 4.

Reprinted in "Readings in trade-unionism" compiled by David J. Saposs. New York, George H. Doran Co., 1926, pp. 430, 431.

OLANDER, VICTOR A.
The Illinois victory.
American Federationist, August, 1925, v. 32, pp. 660–663.
On the injunction limitation bill in Illinois.

OLIPHANT, HERMAN.
Labor: what are its rights?
International Molders' Journal, June, 1928, v. 64, pp. 338, 339.

OPINION AND COMMENT ON THE STRIKE INJUNCTION.
Railway Review, September 9, 1922, v. 71, pp. 342–345, 351, 352.
See also issues of September 16–30, 1922, pp. 387, 421, 422, 443–446.

PICKETING AND THE CLAYTON ACT.
Monthly Labor Review, January, 1922, v. 14, pp. 190–193.
Summary of decision in American Steel Foundries *v.* Tri-City Central Trades Council (42 Sup. Ct. Rep. 72).

PIRNIE, NELSON R.
Injunction: Coal strike enjoined as a violation of the Lever Act.
Cornell Law Quarterly, January, 1920, v. 5, pp. 184–189.

POST, LOUIS F.
The abuse of injunctions.
Life and Labor Bulletin (National Women's Trade Union League of America), January, 1924, v. 2, No. 17, p. 3.
Review of The Labor Injunction, by John P. Frey.

POWELL, THOMAS REED.
Collective bargaining before the Supreme Court.
Political Science Quarterly, September, 1918, v. 33, pp. 396–429.
After a brief survey of the Adair and Coppage cases the article discusses in detail the majority and minority opinions in the case of Hitchman Coal & Coke Co. *v.* Mitchell.

—— The Supreme Court's control over the issue of injunctions in labor disputes. (*In* Academy of Political Science, *New York.* Proceedings, June, 1928, v. 13, pp. 37–77.)
A comprehensive survey of the Supreme Court's decisions relating to injunctions from the Debs case in 1895 to date with excerpts from the opinions. The full footnote references to cases and discussions in law journals are especially valuable.
In the view of this author the Clayton Act, "a statute full of words which seemed a balm to labor," has turned out upon interpretation to be chiefly a bane. "Important issues of policy depend for authoritative adjudication upon the chance of the outlook and the temper of a majority of the members of the Supreme Court at the time when the issues arise." But apart from this fact he regards the machinery of the law as inadequate "for creative contributions to the enterprise of adjusting the conflicting ambitions of those who pay for work and those who work for pay . . . The power of the courts must be reckoned with in any approach to the problem, but the problem may be to develop devices so that this power need never be invoked."

QUINLON, PATRICK L.
Traction tussle becomes national battle.
Labor Age, December, 1927, v. 16, No. 12, pp. 5, 6.
On the Interborough case in New York City.

RALSTON, JACKSON H.
Government by injunction.
Cornell Law Quarterly, May, 1920, v. 5, pp. 424–429.

RALSTON, JACKSON H. and JAMES A. EMERY.
Injunctions in labor disputes; for and against.
Survey, February 7, 1914, v. 31, pp. 575–582, 602–604.
Position of the American Federation of Labor discussed by Mr. Ralston (pp. 575–579); position of the National Association of Manufacturers by Mr. Emery (pp. 579–582, 602–604). *See also* letter from Edwin Witte in issue of March 21, 1914, pp. 787, 788, and reply by J. A. Emery.

RECENT INJUNCTIONS IN LABOR DISPUTES IN NEW YORK.
Monthly Labor Review, October, 1921, v. 13, pp. 911–913.

"REMINDS OF INVOLUNTARY SERVITUDE."
New Republic, Apr. 27, 1927, v. 50, pp. 262–264.
Editorial reviewing the Bedford Cut Stone Case with excerpts from the dissenting opinion of Mr. Justice Brandeis.

ROBINSON, JOSEPH T.
The temporary injunction in the railway strike.
Congressional Record, Sept. 6, 1922, v. 62, pp. 12192–12208.
The legality and constitutionality of the injunction attacked by Mr. Robinson; action of the administration defended by Mr. Watson.

ROSENBLUM, IRL B.
Use of injunctions in labor disputes.
St. Louis Law Review, May, July, 1919, v. 4, pp. 18–46, 78–97.
Discusses the relation of the enjoining order to the strike, the boycott, the picket, and to contempt proceedings as established by judicial decisions.

RUBIN, W. B.
Chief Justice Taft and picketing.
American Federationist, February, 1922, v. 29, pp. 106–109.

RYAN, JOHN AUGUSTINE.
The labor injunction in the light of justice.
American Federationist, March, 1928, v. 35, pp. 290–293.
Address at Cooper Union, New York, Feb. 5, 1928, at a meeting called to protest against the abuse of the injunction in industrial disputes. Same in Catholic Charities Review, March, 1928, v. 12, pp. 79–81. Belief expressed is that the burden of deciding whether certain types of labor activities are to be permitted or restrained should not rest with the courts, whose business it is to apply law, not to make it. Suggests in place of the Shipstead proposal a law prohibiting injunctions in labor disputes except to restrain actions which are already forbidden by statutes.

THE SAME MR. TAFT.
New Republic, Jan. 18, 1922, v. 29, pp. 191–194.
An analysis of the opinion of the Chief Justice in the case of Truax *v.* Corrigan declaring unconstitutional the Arizona law limiting the use of injunctions in labor disputes. *See also* editorial on "The political function of the Supreme Court" in New Republic, Jan. 25, 1922, pp. 236–238.

SAUNDERS, WALTER H.
A review of recent decisions affecting labor and employment.
Georgia Law Journal, May, 1927, v. 15, pp. 361–381.

SEAGER, HENRY R.
The injunction.
Survey, Feb. 7, 1914, v. 31, pp. 594, 595.

SECONDARY BOYCOTTS AND THE CLAYTON ACT.
Monthly Labor Review, February, 1921, v. 12, pp. 413–416.
Summary of the majority and minority opinions in the Duplex Printing Co. case (41 Sup. Ct. 172).

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Labor and the courts.
Social Forces, September, 1926, v. 5, pp. 136–140.

SHUBERT, I. J.
Challenge to government by injunction.
American Mercury, June, 1928, v. 14, pp. 192–195.

SMOTHERING A STRIKE BY INJUNCTION.
Literary Digest, Sept. 16, 1922, v. 74, No. 12, pp. 7–9.
Includes quotations from leading newspapers on the injunction issued in the railroad strike on application of Attorney General Daugherty.

SOULE, GEORGE.
The case against the injunction.
Nation, May 1, 1920, v. 110, pp. 576–577.

STANLEY, LOUIS.
The injunction: What it is and how it works.
Advance (Amalgamated Clothing Workers of America), Dec. 9, 1927, p. 7.
—— Wanted: an injunction revolution.
Justice (International Ladies' Garment Workers' Union), Dec. 16, 1927, v. 9, No. 50, p. 5.

STERNAU, H. G., *comp.*
Railroad strike injunction.
American Labor Legislation Review, September, 1922, v. 12, pp. 157–161.
Includes quotations from editorial comment in New York City daily papers.

SWAYZEE, CLEON O.
Some things we don't know about the injunction.
American Federationist, August, 1928, v. 35, pp. 920–926.

THOUGHTLESS JUDGES.
New Republic, Dec. 9, 1925, v. 45, p. 76.
On the injunction issued in the strike of the Amalgamated Clothing Workers against the International Tailoring Co. and the J. L. Taylor Co. View expressed is that the support given by the courts to employers in their fight against organized labor "through drastic and far-reaching injunction orders conduces to recklessness and carelessness which in the long run makes conflict inevitable."

TIPPY, WORTH M.
Injunction abuse.
American Federationist, March, 1928, v. 35, pp. 287–289.
Address at Cooper Union, New York, Feb. 5, 1928, at meeting called to protest against the abuse of the injunction in industrial disputes.

TO WHAT EXTENT IS THE REMEDY BY INJUNCTION AVAILABLE in behalf of private and public interests in controversies between capital and organized labor.
St. Louis Law Review, September, 1920, v. 5, pp. 150–162.

TOBRINER, MATHEW O.
The labor injunction.
International Molders' Journal, April, 1924, v. 40, pp. 193–198.

TODD, LAURENCE.
Congress looks at injunctions, labor's legislative program at Washington.
Labor Age, February, 1928, v. 17, No. 2, pp. 2, 3.

TWO INJUNCTIONS.
New Republic, Sept. 2, 1925, v. 44, pp. 32, 33.
Case of the International Tailoring Co. which applied for injunctions against the Amalgamated Clothing Workers in Chicago and New York. Contrasts the situation in Illinois under the limitations regarding the use of injunctions fixed by law with that of New York where the injunction was "curbed only by the vague limitations of precedent and the personal views of the judge."

UNITED MINE WORKERS OF AMERICA.
Some recent injunctions issued against the United Mine Workers of America.
United Mine Workers' Journal, Jan. 1, 1928, pp. 12–14; Jan. 15, 1928, pp. 12–14.
Digest and analysis of injunctions issued in various Federal courts.

THE USE OF INJUNCTIONS IN LABOR DISPUTES.
Editorial Research Reports, Feb. 4, 1928, pp. 113–133.

[THE USE OF THE INJUNCTION IN LABOR DISPUTES].
New Republic, Oct. 13, 1926, v. 48, p. 205; Nov. 3, 1926, p. 283.
Editorials criticising the injunction issued against the striking garment workers in New York City which prohibited every form of picketing and moral suasion. *See also* reply of Max Meyer, secretary of the Industrial Council, in issue of Nov. 17, 1926, p. 379.
View expressed is that the way to enforce the law during a strike is not through courts of equity but by the police and the criminal courts.

[VAHEY, JAMES H.].
An important legal decision.
American Federationist, March, 1921, v. 28, pp. 303–308.
A review of the Supreme Court decision in the cases of Hitchman Coal & Coke Co. *v.* Mitchell and Duplex Printing Press Co. *v.* Deering. By the counsel of the Amalgamated Association of Street and Electric Railway Employees of America.

VIOLATIONS OF INJUNCTIONS IN LABOR DISPUTES.
Monthly Labor Review, January, 1924, v. 18, pp. 163, 164.
Brief summary of three decisions in which the United States Circuit Court of Appeals sustained judgments of contempt for violations of labor injunctions.

VAN DYKE, HARRY W.
The Clayton antitrust bill; its vicious labor-exemption, anti-injunction and contempt provisions.
American Employer, June–July, 1914, v. 2, pp. 643–651, 707–718.

—— Should trade-unions be exempt?
American Employer, April, 1914, v. 2, pp. 515–522.
Analysis of Mr. Gompers's argument favoring repeal of antitrust law as to labor organizations and as to power to issue injunctions in labor disputes. Partially reprinted in American Industries, New York, May, 1914, pp. 16, 17, 45–47.

WAGNER, ROBERT F.
[Speech before New York State Federation of Labor, Aug. 28, 1928.]
United States Daily, Aug. 29, 1928, pp. 1, 2.

WALKER, JOHN H.
Constitutionality of injunction—limitation law.
Illinois State Federation of Labor Weekly News Letter, May 29, 1926, v. 12, No. 9, pp. 1, 3, 4.

WARRUM, HENRY.
How Federal court injunctions insulate miners employed by nonunion operators.
United Mine Workers' Journal, June 15, 1928, pp. 3–5, 17.
Statement by the general counsel of the United Mine Workers before Senate Committee on Interstate Commerce, May 17, 1928.
See also testimony before Senate Committee on the Judiciary on bill to limit scope of injunctions in labor disputes (p. 219 of this list).

WEINZWEIG, IRVING.
The court forbids. Recent injunctions and their possible effect on labor.
Advance, Nov. 11, 1927, pp. 5, 8.

WHAT ABOUT INJUNCTIONS? SHALL WE FIGHT THEM, USE THEM, OR VIOLATE THEM?
Labor Age, July, 1926, v. 15, No. 17, pp. 15–18.
Three brief articles: Use this weapon, by Arthur Garfield Hays; Violate antiunion injunctions, by Van Bittner; Fight them intelligently, by John F. Gatelee.

WHAT DOES THE AVERAGE WORKMAN BELIEVE ABOUT INJUNCTIONS?
Law and Labor, July, November, 1924, v. 6, pp. 175, 176, 301–304.

WHEELER, EVERETT P.
Injunctions in labor disputes and decisions of industrial tribunals.
American Bar Association Journal, August, 1922, v. 8, pp. 506–508.
Also in Ohio Law Bulletin, v. 20 (1922), p. 230.

—— What is the matter with injunctions?
Independent, January 23, 1913, v. 74, pp. 96–198.

WHEN THE DANBURY JURY SANG THE DOXOLOGY.
Journal of Electrical Workers, April, 1928, v. 27, pp. 171, 172, 220.

WHITELOCK, GEORGE.
The development of the injunction in the United States.
American Law Review, September, 1912, v. 46, pp. 725–740.
Also in Chicago Legal News, v. 45, p. 107.

WILLIAMS, T. YEOMAN.
Injunctions and labor disputes.
(*In* Academy of Political Science, *New York*. Proceedings June, 1928, v. 13, pp. 78–83.)
In support of the use of injunctions in labor disputes. By the secretary of the League for Industrial Rights.

WILSON, WILLIAM BAUCHOP.
Labor and the Clayton Act.
Harper's Weekly, Apr. 29, 1916, v. 62, pp. 473, 474.

WITTE, EDWIN E.
The Journeymen Stonecutters' decision and other recent decisions against organized labor.
American Labor Legislation Review, June, 1927, v. 17, pp. 139–141.
"Beyond question the law of labor combinations in this country has constantly become more and more unfavorable to labor. The Clayton Act and the State anti-injunction laws have proved valueless . . . These developments have not cowed organized labor nor reconciled it to an acceptance of the law of labor combinations as interpreted by the courts. Rather they have but served to widen the breach between organized labor and the courts . . . The injunction question . . . still constitutes one of the foremost problems confronting this country."

—— Results of injunctions in labor disputes.
American Labor Legislation Review, December, 1922, v. 12, pp. 197–201.
"The great evil of the use of injunctions in labor disputes is not that it handicaps organized labor, but that it undermines our American institutions."

—— Value of injunctions in labor disputes.
Journal of Political Economy, June, 1924, v. 32, pp. 335–356.
The view expressed in this article is that, in the absence of other protective agencies, the injunction does little to prevent and not a little to provoke violence and disorder during strikes.

WOLL, MATTHEW.
Injunctions in West Virginia.
American Federationist, July, 1925, v. 32, pp. 572–578.

—— The menace of injunctions and anticombination laws.
American Labor World, January, 1928, v. 29, No. 2, pp. 4–7.
Address before National Civic Federation at its annual meeting, New York City, Dec. 14, 1927. Also printed in International Molders' Journal, Feb., 1928, v. 64, pp. 74–79; American Photo-Engraver, Jan., 1928, v. 20, pp. 125–131.

WRIGHT, CHESTER M.
The labor injunction.
Law and Labor, January, 1923, v. 5, No. 1, pp. 3–7.
A reply to the review of "The labor injunction," by John P. Frey, in November, 1922, issue of Law and Labor.

Congressional Hearings and Reports

Sixty-second Congress

UNITED STATES. *Congress. House.*

Injunctions. Proceedings in the House of Representatives May 13 and 14, 1912, in connection with the injunction bill to prevent abuses of the process of injunction, H. R. 23635 (by Mr. Clayton) to amend an act entitled "An act to codify, revise, and amend the laws relating to the judiciary," approved March 3, 1911 . . . Washington, 1912. 245 pp.

Compiled and printed under the direction of the Committee on the Judiciary.

—— —— —— *Committee on the Judiciary.*

Injunctions. Hearings [on H. R. 55 and other bills] . . . 62d Cong., 2d sess. January 11–February 14, 1912. Washington, 1912. 384 pp.

Henry D. Clayton, chairman.
Includes text of 12 bills introduced in 62d Congress relating to injunctions.
Statements of Samuel Gompers, Andrew Furuseth, Albert H. Walker, George F. Monaghan, Daniel Davenport, William B. Wilson, and James A. Emery.
Statement of Daniel Davenport also issued as separate pamphlet (50 p.).

—— —— —— —— . . . Regulation of injunctions . . . Report [To accompany H. R. 23635]. [Washington, 1912.] 17, 10 pp. (62d Cong., 2d sess., H. Rept. 612.)

Submitted by Mr. Clayton. Referred to the House calendar and ordered printed Apr. 26, 1912. Pt. 2, "Views of the minority," submitted by Mr. Moon. Ordered printed May 3, 1912.

—— —— —— *Committee on Labor.*

Injunctions in labor disputes and agreements among workingmen and farmers . . . Report to accompany H. R. 23189. [Washington, 1912.] 6 pp. (62d Cong., 2d sess. H. Rept. 588.)

Submitted by Mr. Wilson. Referred to the House calendar and ordered printed April 22, 1912.

—— —— —— —— Congressional regulation of injunctions. Hearings before the Committee on Labor . . . on pending anti-injunction bills. August 12, 1912. [Statement of Thomas Carl Spelling.] Washington, 1912. 58 pp.

—— —— *Senate. Committee on the Judiciary.*

Limiting Federal injunctions. Hearings [June 11–Aug. 13, 1912] before subcommittee on H. R. 23635. Washington, 1912. 451 pp.

—— —— —— —— Hearings on H. R. 23635 January 6 and 10, 1913. 1913. 106 pp.

—— —— —— —— Argument of Thomas Carl Spelling before subcommittee August 13, 1912. Washington, 1912. 73 pp. (62d Cong., 2d sess., S. Doc. 944.)

Sixty-third Congress

UNITED STATES. *Congress. House. Committee on the Judiciary.*

Trust legislation. Hearings. Serial No. 7—pts. 1 to 35 and appendix. Washington, 1914. 2 v.

December 9, 1913, to April 6, 1914.
Appendices include: Antitrust legislation (63d Cong., H. Rept. 627); Regulation of injunctions (62d Cong., H. Rept. 612); Procedure in contempt cases (62d Cong., H. Rept. 613).

—— —— —— —— . . . Antitrust legislation . . . Report, to accompany H. R. 15657. [Washington, 1914.] 4 pts. (63d Cong., 2d sess., H. Rept. 627.)

Henry D. Clayton, chairman.
Pt. 2–4. "Minority views" submitted by Mr. Graham of Pennsylvania, Mr. Nelson, and Mr. Morgan of Oklahoma, respectively.
Ordered printed May 6, 12–13, 1914.
Included are reprints of House reports 612–613 (62d Cong., 2d sess.) entitled "Regulation of injunctions" and "Procedure in contempt cases."

UNITED STATES. *Senate. Committee on the Judiciary.*

Amendments to Sherman antitrust law and related matters. Hearings before subcommittees of the Committee on the Judiciary, United States Senate, together with briefs and memoranda submitted in connection therewith during the Sixtieth, Sixty-first, and Sixty-second Congresses. Comp. for use in consideration of H. R. 15657 (63d Cong., 2d sess.), an act to supplement existing laws against unlawful restraints and monopolies, and for other purposes. . . . Washington, 1914. 1246 pp.

Printed for the use of the Committee on the Judiciary.
Charles A. Culberson, chairman.
CONTENTS.—Pt. 1. House bill (H. R. 15657) under consideration by the committee and the report of the House Committee on the Judiciary thereon. Pt. 2. Federal antitrust law, with amendments, January 1, 1914. Pt. 3. Amendment of Sherman antitrust law. Hearings (S. 6331 and S. 6440) with adverse report of Senator Nelson. 1908. Pt. 4. Federal injunctions. Hearings (S. 3724), 1910. Pt. 5. Federal injunction of State officers. Hearings (S. 4366), 1912. Pt. 6. Limiting Federal injunctions. Hearing (H. R. 23635), 1912. Index.

—— —— —— —— Statement for the railroads in opposition to certain sections of H. R. 15657, relating to injunctions, submitted by Gardiner Lathrop, general solicitor, the Atchison, Topeka & Santa Fe Railway Co. [Chicago? 1914.] 50 pp.

—— —— —— —— Unlawful restraints and monopolies. Report, to accompany H. R. 15657. Washington, 1914. 83 pp. (63d Cong., 2d sess., S. Rept. 698.)

Submitted by Mr. Culberson, July 22, 1914.

—— *Laws, statutes, etc.*

H. R. 15657, act to supplement existing laws against unlawful restraints and monopolies, and for other purposes. [Approved Oct. 15, 1914.] Washington, 1914. 12 pp.

Text of the Clayton Act. Also in U. S. Statutes at Large, v. 38, pt. 1, pp. 730–740. For debates in House of Representatives and Senate consult index volume of Congressional Record for 63d Cong., 2d sess., under number of bill, H. R. 15657.

Seventieth Congress

UNITED STATES. *Congress. Senate. Committee on Interstate Commerce.*

Conditions in coal fields of Pennsylvania, West Virginia, and Ohio. Hearings pursuant to S. Res. 105. Washington, 1928. 2272 pp.

Includes testimony regarding injunctions issued against the miners.
See also speech of Hiram W. Johnson in Congressional Record, Feb. 1, 1928, v. 69, pp. 2299–2309. Speech of John T. Casey in House of Representatives, Feb. 8, 1928 (Congressional Record, v. 69, pp. 2695–2734) includes texts of injunctions against the miners.

—— —— —— *Committee on the Judiciary.*

Limiting scope of injunctions in labor disputes. Hearings before the subcommittee of the Committee on the Judiciary, United States Senate, Seventieth Congress, First session, on S. 1482, a bill to amend the judicial code and to define and limit the jurisdiction of courts sitting in equity, and for other purposes. February 8 to March 22, 1928. Washington, 1928. 732 pp.

Bill introduced by Senator Shipstead would permit equity courts to issue injunctions to protect property only if it is "tangible and transferable." The hearings include a partial list of injunctions issued in trade disputes arranged by groups of workers affected and texts of various decisions in injunction cases; statement of William Green, Andrew Furuseth, John P. Frey and Henry Warrum for the bill, and Albert P. Thom, James A. Emery, Walter G. Merritt against. The testimony of A. T. Groesback and W. H. Latta relates to injunctions issued in Indianapolis street railway strikes.
For text of revised bill reported by the subcommittee, *see* Congressional Record, May 26, 1928, v. 69, pp. 10318–10319. Reprinted in American Labor World, July, 1928, pp. 5–7; New York State Federation of Labor Bulletin, June 26, 1928, pp. 2, 3; Legal Information Bulletin (American Federation of Labor), June, 1928, pp. 5–10.

Court Decisions [2]

LAW AND LABOR; a monthly periodical on the law of the labor problem. Published by the League for Industrial Rights . . . v. 1– (Jan. 1919–) New York, 1919–

Covers important injunction decisions in State and Federal courts.

LEGAL INFORMATION BULLETIN. Published by the American Federation of labor. v. 1–. Washington, 1924– .

Reprints decisions in important injunction cases. Issue of April, 1928, contains decision of Judge Schoonmaker in Pittsburgh Terminal Coal Corporation *v.* United Mine Workers of America.

MASSACHUSETTS. *Courts.*

Labor injunctions in Massachusetts with compilation of statutes relating to labor disputes. (Supplementary to Labor Buls. Nos. 70 and 78.) November 1, 1916. Boston, Wright & Potter Printing Co., 1916. 254 pp. (Labor Bul. No. 117.)

CONTENTS.—General introduction. I. The court of equity: its origin and jurisdiction. II. The law relative to labor disputes. III. Typical forms in injunction cases. IV. Cases relating to labor disputes in Massachusetts 1910–1916. V. Cases of contempt of court. Appendices. Prints in full 34 important cases decided by the Supreme Court of Massachusetts, including Bogni *v.* Perotti (1916) which decided the unconsitutionality of the State anti-injunction law.

UNITED STATES. *Bureau of Labor Statistics.*

Decisions of courts and opinions affecting labor, 1912–1926. Washington, 1913–1927. 13 v. (*Its* Bulletins 112, 152, 169, 189, 224, 246, 258, 290, 309, 344, 391, 417, 444.)

Consult cumulative index in latest issue, under Injunction.
See also section on Labor laws and court decisions in current issues of Monthly Labor Review.

—— *Supreme Court.*

Paine Lumber Co. *v.* Neal.
244 U. S. Reports, pp. 459-485 (37 Sup. Ct. 718).

By a vote of five to four (June 11, 1917) held that the Sherman law did not authorize injured private persons to enjoin a boycott in restraint of interstate trade.

Hitchman Coal & Coke Co. *v.* Mitchell.
245 U. S. Reports, pp. 229–274 (38 Sup. Ct. 65).

Decision (Dec. 10, 1917) declared unionizing employees under contract illegal. Opinion of the court by Mr. Justice Pitney; dissenting opinion by Mr. Justice Brandeis.
Review of case and excerpts from opinion in Monthly Labor Review, January, 1918, v. 6. pp. 146–152.

—— —— Duplex Printing Press Co. *v.* Deering.
254 U. S. Reports, pp. 443–488 (41 Sup. Ct. 172).

In this decision (Jan. 3, 1921) the Supreme Court held that the labor section of the Clayton Act does not legalize a secondary boycott. Opinion of the court by Mr. Justice Pitney; dissenting opinion by Mr. Justice Brandeis.
Full text of opinions in Law and Labor, January, 1921, Supplement (v. 3, No. 1); summary in Monthly Labor Review, February, 1921, v. 12, pp. 413–416.

—— —— American Steel Foundries *v.* Tri-City Central Trades Council.
257 U. S. Reports, pp. 184–213 (42 Sup. Ct. 72).

Decision (Dec. 5, 1921) construed the Clayton Act with reference to picketing. Opinion of the court by Mr. Chief Justice Taft.
Summary in Monthly Labor Review, January, 1922, v. 14, pp. 190–193; Law and Labor, January, 1922, v. 4, pp. 4–7.

—— —— Truax *v.* Corrigan.
257 U. S. Reports, pp. 312–376 (42 Sup. Ct. 124).

Decision (Dec. 19, 1921) held the anti-injunction law of Arizona unconstitutional. Opinion of the court by Mr. Chief Justice Taft; dissenting opinions by Messrs. Justice Holmes, Brandeis, Pitney and Clarke
Summary with excerpts from opinions in Monthly Labor Review, February, 1922, v. 14, pp. 364–368; Law and Labor, January, 1922, v. 4, pp. 7–11.

—— —— Michaelson et al. *v.* United States.
266 U. S. Reports, pp. 42–71 (45 Sup. Ct. 18).

Unanimous decision (Oct. 20, 1924) sustaining the requirements of the Clayton Act for jury trials in criminal contempts.
Summary in Monthly Labor Review, December, 1924, v. 19, pp. 1362—1364; Excerpts also in Law and Labor, November, 1924, v. 6, pp. 292–294.

—— —— Bedford Cut Stone Co. *v.* Journeymen Stone Cutters' Association of North America.
274 U. S. Reports, pp. 37–65 (47 Sup. Ct. 522).

Case was an injunction against the stonecutters' union with local branches in many States, restraining it from ordering its members not to work on stone produced by the plaintiff. Decision (Apr. 11, 1927) held refusal of union to handle nonunion products to be obstruction of interstate commerce. Opinion of the court by Mr. Justice Sutherland; dissenting opinions by Messrs. Justice Brandeis and Holmes.
Review of case with excerpts from opinions in Law and Labor, May, 1927, v. 9, pp. 109–115; Monthly Labor Review, May, 1927, v. 24, pp. 991–994.

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[1] *See also* entries under Ellingwood, Frey, Interborough, Mason, Oakes and Sayre in first section of this list. For a comprehensive review of court decisions *see* "The Supreme Court's control over the issue of injunctions in labor disputes" by Thomas Reed Powell in Proceedings of the Academy of Political Science, New York, June 1928, v. 13, pp. 37–77.

PUBLICATIONS RELATING TO LABOR

Official—United States

COLORADO.—Bureau of Mines. *Annual report, for the year 1927. Denver, 1928. 70 pp., folder.*

The brief section on accidents in the Colorado mines is noted on page 70 of this issue.

INDIANA.—Legislative Bureau. *Yearbook, 1927. Indianapolis, 1928. 1,293 pp.; maps, charts.*

Among the reports of various State agencies included in this volume are those of the industrial board and the mines and mining department.

MARYLAND.—Industrial Accident Commission. *Thirteenth annual report, for the year November 1, 1926, to October 31, 1927.* [*Baltimore, 1928?*] *46 pp.*

Data on workmen's compensation from this report are given on page 97 of this issue.

MISSOURI.—Bureau of Mines. Inspection Department. *Fortieth annual report, year ending December 31, 1927. Jefferson City* [*1928?*]. *92 pp.; map.*

During 1927 there were only 15 accidents in the mining industry of Missouri, 9 of which occurred in the coal mines, 5 in the lead and zinc mines, and 1 in the shale mines.

NEW YORK.—Industrial Survey Commission. *Report to the legislature, transmitted March 9, 1928. Albany, 1928. 138 pp.* (*Legislative document (1928), No. 87.*)

Reviewed on page 46 of this issue.

—— *Report of Lindsay Rogers as commissioner under section 3 of the executive law, known as the Moreland Act, "to examine and investigate the administration of the Department of Labor of the State of New York." Part I.—Charges of fraud. Albany, 1928. 37 pp. Part II.—Bureau of workmen's compensation. Albany, 1928. 79 pp.*

Reviewed on page 94 of this issue.

PORTO RICO.—Department of Agriculture and Labor. Bureau of Labor. *Twelfth annual report. San Juan, 1928. 77 pp., illus.*

Contains data on labor conditions, including wages, housing and living conditions of workers, unemployment, workmen's compensation, etc. The section of the report relating to workmen's compensation is summarized on page 98 of this issue.

UNITED STATES.—Department of Commerce. Bureau of Foreign and Domestic Commerce. *Trade information bulletin No. 559: Luxemburg—a brief economic survey, by James E. Parks. Washington, 1928. 13 pp.*

This report contains a brief statement regarding wages and cost of living and social insurance in Luxemburg.

—— —— —— *Trade promotion series No. 61: Kingdom of Serbs, Croats, and Slovenes (Yugoslavia)—a commercial and industrial handbook, by Kenneth S. Patton. Washington, 1928. 261 pp.; maps, illus.*

The section of this report dealing with labor legislation is reviewed on page 87 of this issue.

UNITED STATES.—Department of Labor. Bureau of Labor Statistics. *Bulletin No. 462: Park recreation areas in the United States. Washington, 1928. 95 pp.; maps, illustrations.*

This study was summarized in the Review for July, 1928 (pp. 1–7).

—— —— Children's Bureau. *Publication No. 183: Children in street work, by Nettie P. McGill. Washington, 1928. 353 pp., illus.*

Reviewed on page 60 of this issue.

—— —— Employment service. *Harvesting in the "Big Wheat Belt," 1928. Washington, May, 1928. 8 pp.*

A bulletin intended to give general information concerning wheat harvesting.

—— Interstate Commerce Commission. Bureau of Statistics. *Accident bulletin No. 96: Collisions, derailments, and other accidents resulting in injury to persons, equipment, or roadbed, arising from the operation of steam railways in interstate commerce, calendar year 1927. Washington, 1928. 112 pp.; charts.*

A brief summary of this report appears on page 68 of this issue.

Official—Foreign Countries

AUSTRALIA.—Department of Health. Division of Industrial Hygiene. *Service publication No. 6: Dermatitis in the Australian rubber industry, by Keith R. Moore. [Melbourne, 1928?] 74 pp., mimeographed.*

A report of an investigation of 200 cases of dermatitis in rubber factories in Sydney and Melbourne.

—— (NEW SOUTH WALES).—Director-General of Public Health. *Report for the year 1926. Sydney, 1928. 169 pp.; charts.*

The report includes a section on industrial hygiene containing the results of a study on the index of comfort in the ventilation of theaters in Sydney and one on the cause of occupational dermatitis in Sydney rubber works in 1927.

—— (VICTORIA).—Government Statist. *Victorian yearbook, 1926–27. Melbourne, 1928. 661 pp.; maps.*

Includes data on production, wages, employment, industrial accidents, workmen's compensation, and cooperative and friendly societies.

BELGIUM.—Caisse Générale d'Épargne et de Retraite. *Compte rendu des opérations et de la situation, année 1927. [Brussels?] 1928. 84 pp.*

An account of the operation and the financial situation of the general savings and retirement fund in Belgium during 1927.

CANADA.—House of Commons. Select Standing Committee on Industrial and International Relations. *Minutes of proceedings and evidence and final report. Ottawa, 1928. pp. iv, 209–233. (No. 14—May 15, 1928.)*

A summary of the conclusions of the committee is given on page 100 of this issue.

—— (ALBERTA).—Bureau of Labor. *Annual report, for the year 1927. Edmonston, 1928. 22 pp.; charts.*

Gives data on weekly wage rates for male and female wage earners, factory inspection, employment office placements, and other labor subjects.

—— (BRITISH COLUMBIA).—Bureau of Mines. *Annual report, for the year ended December 31, 1927, being an account of mining operations for gold, coal, etc., in the Province of British Columbia. Victoria, 1928. 504 pp.; maps, diagrams, illustrations.*

FINLAND.—[Socialministeriet.] Statistiska Centralbyrån. *Olycksfallen i arbetet, år 1924. Helsingfors, 1928. 94 pp. (Finlands officiella statistik XXVI, Arbetsstatistik A, 21.)*

Report of the Central Statistical Bureau of Finland on accidents to workers, and insurance therefor, in Finland in 1924. Published in Finnish with table of contents and résumé in French.

GREAT BRITAIN.—Committee on Education and Industry (England and Wales). *Report: Second part. London, 1928. 79 pp.*

This section of the report deals with the system of public education in relation to the requirements of trade and industry. "The evidence received from employers and workers is not of such a character as to allow of the formulation of a series of concrete requirements related to various branches of education." Consequently, the findings are of a rather general nature. Specialized vocational training in the elementary schools, the committee found, is not desired by industry, which wishes general intelligence and adaptability rather than definite trade training for children entering industry from these schools. In the secondary schools, the training given is adapted to the kind of work the pupils generally enter, but increased opportunities for technical training would be advantageous. The arguments in favor of raising the age for compulsory school attendance, or, as an alternative, requiring attendance at day continuation schools, are summarized, but in view of the fact that the employers' organizations opposed both these measures and that the committee was to consider especially the requirements of trade and industry, no recommendation is made on the point. Closer contact between trade and industry and the various types of schools is advised, and some measures for securing this are suggested.

—— Industrial Transference Board. *Report. London, 1928. 83 pp. (Cmd. 3156.)*

Reviewed on page 56 of this issue.

—— Ministry of Health. *Persons in receipt of poor-law relief (England and Wales). London, 1928. 66 pp.*

The figures given are for the night of January 1, 1928. The total number of men, women, and children receiving relief of any kind at that date was 1,364,691, or 347 per 10,000 of the estimated population. The figures are grouped according to the kind of relief received, whether or not the need for aid was due to unemployment, the sex, age, and condition as to dependency of the recipient, and the like. Those receiving outdoor relief on account of unemployment included 121,183 men, 103,366 women, and 225,364 children—a total of 449,913. This was a decrease of 182,191 from the number enrolled on January 1, 1927, at which time unemployment due to the coal stoppage was rife.

—— Ministry of Labor. *Report for the year 1927. London, 1928. 135 pp. (Cmd. 3090.)*

Contains a review of industrial relations, unemployment and unemployment insurance, juvenile employment, administration of the trade boards acts, labor statistics, and international labor relations.

—— Registry of Friendly Societies. *Report for the year 1926. Part 2.—Friendly societies. London, 1928. 36 pp.*

Gives summary data covering the operations of the societies for the year 1926.

—— —— *Report for the year 1927. Part I.—General. London, 1928. 67 pp.*

Gives a general statement of the work of the registry, with lists of the different classes of societies, schemes, and associations coming under its operations, and some of the statutes and statutory regulations affecting the field of work.

INDIA (BURMA).—Registrar of Cooperative Societies. *Report on the working of the cooperative societies act in Burma, for the year ended June 30, 1927. Rangoon, 1928. 101 pp.*

INTERNATIONAL LABOR OFFICE.—*Studies and reports, Series A (industrial relations), No. 29: Freedom of association. Vol. II.—Great Britain, Irish Free State, France, Belgium, Luxemburg, Netherlands, Switzerland. Geneva, 1927. 413 pp.*

INTERNATIONAL LABOR OFFICE.—*Studies and reports, series M (social insurance), No. 8: Benefits of the German sickness insurance system from the point of view of social hygiene, by Franz Goldman, M. D., and Alfred Grotjahn, M. D. Geneva, 1928. 188 pp.*

The results obtained in Germany in improving the public health and in general in raising the standards of hygiene through the operation of the sickness insurance scheme are described in this report.

JAPAN.—Cabinet Impérial. Bureau de la Statistique Générale. *Résumé statistique de l'Empire du Japon. 42d année. Tokyo, 1928. 169 pp.; charts.*

Of the various subjects treated in this report the following are more directly related to labor: Average daily wages in specified industries in 1926, cooperative societies, industrial distribution of workers, hours of work, unemployment, activities of employment offices, and strikes.

—— Department of Commerce and Industry. Bureau of Statistics. *The statistics of the Department of Commerce and Industry, 1926. Tokyo, March, 1928. 126 pp.*

The five sections of this volume deal respectively with the manufacturing industry, the mining industry, commerce, patents, and commercial and industrial associations.

SWITZERLAND.—Departement de l'Économie publique. Office fédéral des Assurances sociales. *Rapport du Conseil fédéral sur sa gestion en 1927. [Bern, 1928?] 28 pp.*

The report of the Swiss social insurance office for the year 1927 covering the operation of the sickness and accident insurance funds.

Unofficial

BILGRAM, HUGO. *The remedy for overproduction and unemployment. New York, Vanguard Press, 1928. 113 pp.*

The foreword of the book states that it is "an arraignment of some of the economic tenets taught by the modern school and shows that the paradoxes so often arising in the economic world are the natural outcrops of the false groundwork upon which some of our institutions are built."

CHURCHILL, STELLA. *Health services and the public. London, Whitefriars Press (Ltd.), 1928. 266 pp.*

This account of the development of public health services in various countries contains chapters on industrial hygiene and on health insurance schemes.

COMITÉ CENTRAL DES HOUILLÈRES DE FRANCE ET CHAMBRE SYNDICALE FRANÇAISE DES MINES MÉTALLIQUES. *Annuaire houillères, mines de fer, mines métalliques, 1928. Paris, 1928. 871 and 244 pp.*

Part IV of this volume contains statistics of production and wages in coal mines in France in 1925.

CONDITIONS SOCIALES EN FINLANDE. *Helsingfors, 1926. 150 pp., illus.*

A series of articles selected from a work of 3 volumes on Finland, its people, and its industries.

DOBB, MAURICE. *Modern capitalism: Its origin and growth. London, Labor Research Department, 1928. 32 pp. (Syllabus series No. 20.)*

A syllabus for the use of students, giving an outline of the subject and lists of books from which detailed information can be secured.

DRET, HENRI. *La chaussure. Paris, Gaston Doin et Cie, 1927. 296 pp.*

An account of the development of the shoe industry in France both from the commercial side and from the standpoint of employers' and employees' organizations.

ENGINEERING AND ALLIED EMPLOYERS' NATIONAL FEDERATION (England). *Thirty years of industrial conciliation. London, Broadway House, 1927. 115 pp.*

Gives an account of relations between employers and employed in the British engineering industry since the adoption of the terms of settlement which ended the strike of 1897–98. Details are given as to hours, wages, working agreements, disputes which have risen since the adoption of the 1898 terms, and other matters affecting industrial relations.

HAUSER, HENRI. *Ouvriers du temps passé, xv^e–xvi^e siècles. Paris, Librairie Félix Alcan, 1927. xlii, 268 pp.*

A history of labor in France during the fifteenth and sixteenth centuries dealing with the regulations governing the work of apprentices and journeymen, the form of the labor contract, wages, and working conditions and wages in women's occupations. There is an account of a strike involving workers in Lyons and Paris in 1539 and of its results.

HIGH SCHOOL SCHOLARSHIP ASSOCIATION (INC.), NEW ORLEANS. *The office machine operator in New Orleans. New Orleans, 1928. 34 pp. (New Orleans vocational information series, No. 7.)*

Contains information on the different types of machines used in office work and their operation, the training and qualifications necessary for operators and their chances of promotion, etc., based on data secured from firms in New Orleans.

ILLINOIS MANUFACTURERS' COSTS ASSOCIATION. *Wage incentives for office employees. Chicago, 231 S. La Salle Street, 1928. 7 pp.*

Suggestions on methods of establishing wage-incentive plans for office employees.

LABOR PARTY (GREAT BRITAIN). *Labor and the nation. London, Transport House (South Block), Smith Square, S. W. 1 [1928?]. 50 pp.*

A statement of the policy and program of the Labor Party. The difficulties of the present situation are discussed, and the means by which they might be remedied, followed by a summary of the legislative and administrative measures which the party will undertake to put through, if returned to power.

NATIONAL BOARD OF FIRE UNDERWRITERS. *Regulations for paint spraying and spray booths, as recommended by the National Fire Protection Association. [New York?] 1928. 10 pp.*

A complete revision of the edition published in 1922.

NATIONAL INDUSTRIAL CONFERENCE BOARD (INC.). *The cost of living in the United States, 1914–1927. New York, 247 Park Avenue, 1928. 142 pp.; charts.*

This is the latest issue of a series of publications in which the results of the National Industrial Conference Board's inquiries in the field of cost of living are set forth. It summarizes in one volume the results of the investigations by the board since 1914, with particular emphasis upon the monthly changes in the cost of living from November, 1925, to January, 1928.

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS. *Proceedings of the 1927 annual conference. New York, 370 Seventh Avenue [1928?]. 194 pp.; charts, illustrations.*

Part of the sessions of the conference were devoted to the discussion of various aspects of the problem of eye accidents in industry.

PENNSYLVANIA BAR ASSOCIATION. LEGAL AID COMMITTEE. *Report. Bedford Springs, 1928. 30 pp.*

Reviewed on page 53 of this issue.

PERLMAN, SELIG. *A theory of the labor movement. New York, Macmillan Co., 1928. 321 pp.*

The first part of the book gives a historical survey of the labor movements in Russia, Germany, Great Britain, and the United States. The second part, devoted to a theory of the labor movement, contains chapters on economic opportunity and group psychology; the "working rules" and philosophy of organized labor; the intellectuals' program for labor; and an advanced trade-union philosophy.

WORK, MONROE N. *A bibliography of the negro in Africa and America. New York, H. W. Wilson Co., 1928. xxi, 698 pp.*

Contains over 17,000 references, covering periodicals, books, and pamphlets in different languages, compiled from the representative libraries of Europe as well as of our own country. The references under the two geographical divisions have been subdivided according to subject, so that there are in all some 74 carefully classified chapters. There is also an excellent index of authors. By far the most comprehensive bibliography of the subject which has yet appeared.